The Bulletin

of the

American Association of Nurse Anesthetists

NOVEMBER
1942

VOLUME 10 NUMBER 4

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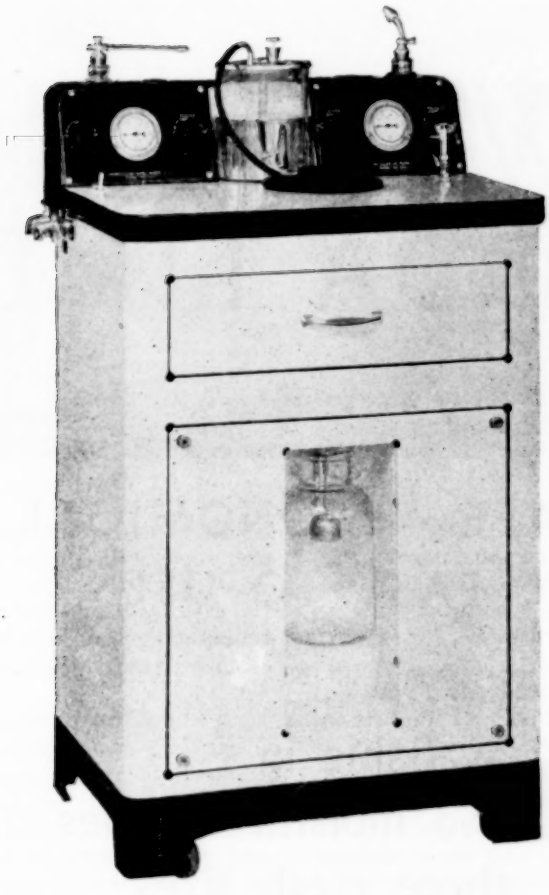

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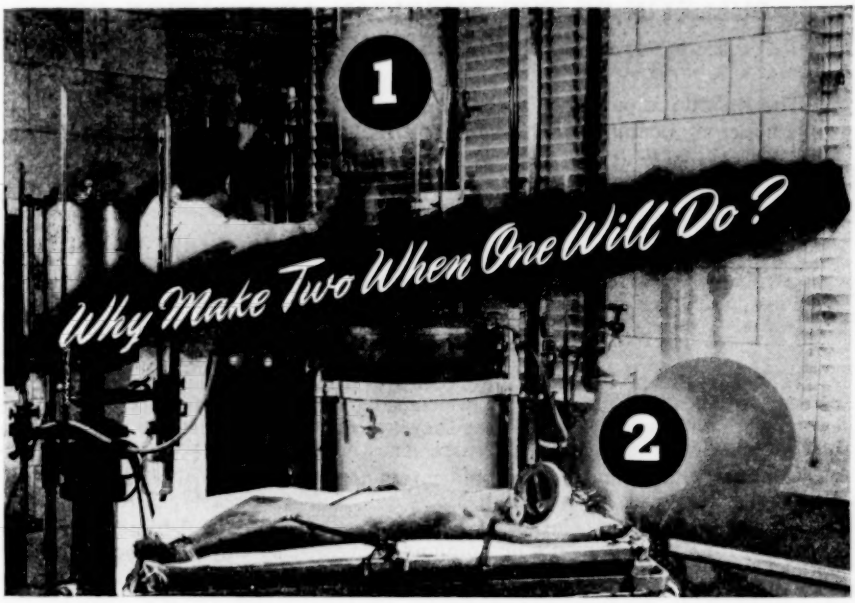

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BULLETIN OF THE AMERICAN ASSOCIATION OF NURSE ANESTHETISTS

The Bulletin is published at 2065 Adelbert Road, Cleveland, Ohio.

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EDITORIAL COMMUNICATIONS

The Bulletin invites concise, original articles on anesthesia. Description of new technics and methods are welcomed. Articles are accepted for publication with the understanding that they are contributed solely to the Bulletin of the American Association of Nurse Anesthetists.

Manuscripts submitted for publication may be sent to Gertrude L. Fife, University Hospitals, Cleveland, Ohio.

The American Association of Nurse Anesthetists does not hold itself responsible for any statements or opinions expressed by any contributor in any article published in its columns.

Manuscripts. — Manuscripts should be typewritten on one side of the paper only, with double spacing and liberal margins. References should be placed at the end of the article and should conform to the following style: viz., name of author, title of article, and name of periodical with volume, page, and year.

Illustrations accompanying manuscripts should be numbered, provided with suitable legends, and marked on margin or back with the author's name. Authors should indicate on the manuscript the approximate position of text figures.

Illustrations — A reasonable number of half-tones will be reproduced free of cost to the author, but special arrangements must be made with the Chairman of the Publishing Committee for elaborate tables or extra illustrations.

Reprints. — Fifty or more reprints may be obtained at a nominal cost if ordered within fifteen days following the date of publication of the Bulletin.

BUSINESS COMMUNICATIONS

All communications in regard to advertising, subscriptions, change of address, et cetera, should be addressed to the Chairman of the Publishing Committee, 2065 Adelbert Road, Cleveland, Ohio.

The Chairman of the Publishing Committee should be advised of change of address about fifteen days before the date of issue, with both old and new addresses given.

Because of the second class postal rates in effect the Postoffice does not forward the Bulletin unless extra postage is sent to the Postoffice to which the Bulletin was originally mailed.

Non-Receipt of Copies. — Complaints of non-receipt of copies should be made within ten days following date of publication, otherwise the supply is likely to be exhausted.

Headquarters—American Association of Nurse Anesthetists
18 East Division Street, Chicago, Illinois
Mary E. Appel—Executive Secretary

The Bulletin of the American Association of Nurse Anesthetists

VOLUME 10, NO. 4 NOVEMBER, 1942

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ROSALIE C. MCDONALD
President
October, 1942

OFFICERS ELECTED
1943

President	Mrs. Rosalie C. McDonald Emory University Hospital, Emory University, Georgia
Vice-President	Helen Blanchard 2342 — 15th Street, Troy, New York
Treasurer	Gertrude L. Fife University Hospitals of Cleveland, Ohio
Trustee	Helen Lamb Barnes Hospital, St. Louis, Missouri

TENTH ANNUAL MEETING

REPORTS OF OFFICERS AND COMMITTEES

PRESIDENT

In keeping with the spirit of the present war period, your President's account of her now ending stewardship will be streamlined to essential narration of the Association's past year activities, and a brief foreword looking to the future.

Our Association's continued growth in strength and influence, as evidenced by the enrollment of 350 additional members during the year, attests to the soundness of the precepts upon which the Association is founded, and is a token of increasing national endorsement of, and commitment to, the constructive forward-looking programs that our association has adopted, and now has actively under way.

In surveying the work of the past year, it is gratifying to note that during this period almost 25 per cent of all the schools of anesthesia for nurse anesthetists that have functioned for a year or more, have been surveyed by our field visitors, and while due to the resignation of Miss Hodgins from the chairmanship of the Committee on Education, it became necessary to transfer that chairmanship, the committee functioning under the able subsequent chairmanship of Mrs. Fife, is carrying that phase of our work steadily forward.

A very comprehensive study of our pattern curriculum by the Curriculum Committee under Mrs. McDonald's chairmanship, has yielded proposed improvements here and modifications there, that present progressive possibilities in the direction of our goal of a didactic formula that may be expected to achieve national application and adoption.

Correlative to those projects, the special committee headed by Miss Shupp has compiled a very inclusive plan directed toward possible eventual examination and certification of nurse anesthetists. The future import of such a project, when fully perfected and put into practice, is at once apparent.

The Public Relations Committee under the chairmanship of Miss Blanchard has prepared an effective legislative study and public contact plan, which when developed to its logical conclusion will be of constructive and protective value to the continued integrity of our field.

Your Board of Trustees through its Executive Committee, has in conference with a special committee appointed for the purpose by the American Hospital Association, discussed important phases affecting our mutual field of institutional anesthesia, and is happy to report the appointment by that Association's committee of a liaison officer for the purpose of functioning between our Associations or their Committees on matters affecting the progress and welfare of this field of mutual interest.

Your Board of Trustees through recurrent visits of its designated committee members to Chicago headquarters, has rendered personalized assistance to our Headquarters personnel in its work of developing that phase of our Association activity to an ultimate objective, of national clearing house for

details of many of our projects: rendering cooperative and ever broadening service to our membership as a whole, to the eventual benefit of the field generally. The whole-hearted cooperation of our Headquarters staff has been a source of great satisfaction.

Legislatively, the action of chief significance during the year has been a ruling of the Attorney-General of the State of Indiana that the administration of anesthetics in that state by nurse anesthetists is not illegal.

Since we met together a year ago in annual convention, our country has actively entered into the war against the savage aggressor nations who are attempting to conquer the civilized world. Each of us individually, and our field as a whole, has thereby become an integral part of the great war effort, and must unstintingly give its fullest service to bring about the successful termination of this greatest crisis that our country has ever faced. How can our best contribution to that end be made?

No one answer can be suitable for all individuals in our field, any more than one single response can be applicable to all individuals in any *other* professional field or to each individual in any of the industrial, commercial or other lay fields. First and foremost, it is obvious that the fighting forces of our nation must be completely served, with every essential protective care that is needed to preserve their strength and health, and to safely restore to effectiveness those whom illness or accident overtakes.

Second, our supporting civilian population must also be maintained at an efficient standard of health and strength, so that it can in full measure provide the "behind the lines" support that is so essential to successful prosecution of the conflict.

Third, to insure continuous and increasing service to the steadily expanding needs, both military and civil, skilled new effectives must be educated and put into our field of human ministry to the strength and the health of our nation.

Clearly a triple responsibility rests upon us, and upon the institutions which foster and make possible our schools of anesthesia, just as it does upon other professional groups that serve and sustain the military and the civilian population of our great land. To facilitate the increase of anesthetic service to the armed forces, your officers have established contacts with military authorities, with a view to securing to our military arm full measure of the special service in which the members of our field are specifically educated and skilled. It is hoped that consequent to these contacts and representations, members of our field may be designated to render to our armed forces the specific experience and skill in anesthesia that is the essence of our specialized education and training.

To provide additional skilled personnel, both for our military services and for our civilian hospitals, upon whom devolves the obligation of protecting the life and health of our home front citizenry, your Association is urging the establishment of increased training facilities in the schools which educate in our subject; and while despite these and allied efforts, a "shortage of trained personnel" still exists, this shortage must be understandingly appraised as inevitably concomitant to the earlier stages of a war economy, that may be materially alleviated as increased numbers of new effectives can be educated into our field. The problem is one that is by no means peculiar to our par-

ticular branch of service, however, but affects similarly practically all groups, professional and otherwise; and while it is expected that it can be reduced to a minimum by the measures now under way, there is at least a possibility that it may exist in one degree or another until the war is over and its abnormal stresses can be removed from the social and professional economy of our nation.

In this connection, while it is important that education in our subject be made available to continually increased numbers of suitable candidates, it is equally important, even vital, to the future welfare, that the quality of education and training we give to this ever increasing number of students, be not compromised in any degree. This is essential not only to the well-being of our military and civil citizenry during the war, but also to avoid the inescapable repercussions that would otherwise certainly supervene upon our field when we enter the post-war period.

The present important period of intensive training of additional nurse anesthetists through which we are now passing, presents a challenge to the utmost of didactic ingenuity and untiring personal service by the educators in our field, and by their important supporting teaching personnel. By the quality of our courageous execution of this war-time responsibility, may well be measured the strength of our post-war establishment. No greater dis-service could be inflicted upon our post-war progress, than would result from existence within our field after the war, of anesthetists who had been compromisingly trained during this emergency period, either by reason of inadequate organization of teaching facilities, or as a result of less than the utmost contribution of educational guidance and personalized tutelage.

A somewhat concomitant problem that may face our field when the post-war period arrives, is the possibility of demobilization of some anesthetists who may have received training only in limited fields of anesthesia by military personnel during their emergency war service. Our great national organization may be expected to evaluate wisely the significance of such a situation, when and if it arises, possibly implementing facilities for additional education for such incumbents, or understandingly designating for them a status commensurate with the measure of their training and acquirement.

But to attempt to foresee at this time even a significant fraction of the post-war problems that may arise, in a world whose ideologies may then be patterned quite differently from those of the present, calls for greater power of prophecy than any of us possesses. However, to repeat an unshakable conviction that I have more than once stated, I feel it inevitable and certain, that whatever the social and professional pattern of post-war economy may prove to be, we shall as a professional group occupy in that economy a position commensurate with, perhaps measured by, the achievements which we as individuals contribute to our field during our continuous daily service in it, and the earnestness with which we devote our skill and experience in our specialized service to the public and to our institutions which minister to it.

HELEN LAMB

EXECUTIVE SECRETARY

The following facts testify to the growth of the Association during the past year:

MEMBERSHIP

Total membership October 1, 1942.....2691
- Active 2600
- Associate 91

New members added 350

In the State Associations Pennsylvania leads with a membership total of..... 300

Illinois is second with a total of..... 256

New York is third with a total of..... 224

ARMED FORCES

Concerning our members in the armed services, the general tenor of their correspondence is that they like their new duties and are happy to be serving their country.

SCHOOLS OF ANESTHESIA

In our list of schools there are thirty-nine hospitals giving a course in anesthesia that follows the pattern curriculum of the American Association of Nurse Anesthetists. There are other schools in the process of organization which will be added to this list when the survey that is being conducted by the Educational Committee has been completed.

This year 603 school lists were sent out, as many as 100 at a time being given to an employment service for nurses to be sent to applicants over the country.

Since February we have had 228 letters of inquiry, telephone calls or personal calls for information regarding schools of anesthesia. Many were from nurses who had had experience in the administration of anesthetics, but not a required course. Some inquiries were from nurses who had had a three or four months' course, and these people were urged to take further training if they wished to become eligible for membership in the Association. One of the first questions usually asked by an applicant is, "If I take a course at this or that particular school, will I be eligible for membership in the Association following graduation?"

PUBLIC EDUCATION

An eight-page brochure, "Anesthesia: A Career for the Graduate Nurse," was compiled by Gertrude L. Fife to inform the public of the objectives of the Association, its educational program and its requirements for membership.

This booklet has had wonderful acceptance. Doctors who are heads of allied associations and hospital journals have been most complimentary. The American Journal of Nursing asked to report parts of this brochure in their Journal. The Science Research Institute of Chicago, publishers of vocational material, are reprinting it.

As a good-will measure, and in the interests of public education, hundreds of these pamphlets have gone out from Headquarters to schools of anesthesia, schools of nursing, hospital superintendents, school editors of many newspapers, and to medical libraries.

BULLETINS OF STATE ASSOCIATIONS

Minnesota, Oregon and Iowa have a monthly bulletin of news notes within their own groups.

Miss Hazel Peterson and Miss Ruth Toenberg, both of Minneapolis, comprise the Publication Committee of the Minnesota Bulletin.

The Oregon Bulletin is edited by Alice Ruuska.

The Iowa Hospital Association and the Iowa Association of Nurse Anesthetists publish a joint Bulletin. The editor for the nurse anesthetists' news is Miss Louise Schwarting, President of the Iowa Association of Nurse Anesthetists, and a former member of the Board of Trustees of the American Association of Nurse Anesthetists.

JOB CLINIC

Your association had a brief statement of its objectives and educational requirements listed in a career brochure that was distributed to more than 1,000 women in the state of Illinois who attended a "job clinic" for those interested in the medical profession. This clinic was sponsored by the Superintendent of Schools at Springfield, Illinois, and received much publicity.

DEFENSE ACTIVITIES

Most of the thirty State Associations have reported that they are buying Defense Bonds and have contributed to the Red Cross. I hope that you are getting some recognition from your home-town newspapers for your good work. As an example of what might be accomplished, I should like to report that at the March, 1942, meeting of the Illinois Association, the society editor of the Chicago Tribune reported, under the heading, "Women in war work," the donations to the Red Cross made by the Illinois Association, and their purchase of Defense Bonds.

HEADQUARTERS LIBRARY

In the Educational Exhibit Booth at the Convention were shown some of the books on anesthesia that have been donated to the Headquarters library by members of the Association and by friends of members.

DEMAND FOR ANESTHETISTS

You are aware that the Association does not operate a placement service. With the overwhelming demand for nurse anesthetists, Headquarters lists the names of hospitals in need, and gives the list to members who have definitely stated that they wished to change positions, and actual contact is left up to the members. In no way does Headquarters become involved in taking a member from one hospital and placing her in another.

One of the good things that has come out of this great need for nurse anesthetists is that members from many parts of the country, such as Florida, Colorado, Michigan, Minnesota and Wisconsin have dropped in at Headquarters.

HEADQUARTERS PROJECTS

A looseleaf notebook unifying the records of routine procedures of Headquarters with those of the State Associations has been prepared to be sent to all Secretaries and Secretary-Treasurers of the thirty State Associations. With many state officers going into service, a complete record of organization-

al work will be of great value to the succeeding officers. This notebook covers the following:

1. The method of handling applications
2. Dues
3. Transfers

and innumerable other transactions between the State Associations and Headquarters.

To preserve the records of your Association, an organizational Headquarters notebook has been prepared, covering every phase of the work done at the main office. This entails:

1. The work of committee chairmen and the members of the committee
2. Money transactions between Headquarters and the national Treasurer
3. Membership and its requirements,

in fact, a complete index of what headquarters, as coordinator of activities, does throughout the year.

ASSEMBLIES

A map has been prepared and was on exhibit at the Educational Booth, showing the organized and unorganized states and the existing assemblies, also the schools of anesthesia and the Association membership. From year to year we hope to show on a similar graph much information of general interest to the members.

Respectfully submitted,

MARY ELIZABETH APPEL,
Executive Secretary

TREASURER

Condensed Statement of Receipts and Disbursements
For Fiscal Year Ended August 31, 1942

Cash Receipts

Initiation fees	$ 725.00	
Dues—American Association	8502.15	
—State Associations	803.25	
Bulletin Income	2619.79	
Reserved for Trust Fund	257.20	
Interest Earned	57.57	
Miscellaneous Income	795.17	$13,760.13

Cash Disbursements

Publishing Bulletins	$2959.84	
Transfer of dues to State Associations	295.50	
Convention Expense	980.44	
Operating Expense	7486.81	
Purchase of Office Equipment	271.51	11,994.10
Excess of Receipts over Expenditures for year		$ 1,766.03

Summary of Assets:

Cash on deposit in General Savings Accounts	$5047.60
Cash in Commercial Account	1028.25
Cash on Deposit in Trust Fund Savings Account	321.60
Cash on Deposit in Trust Fund Income Savings Account	26.40
Six (6) U. S. Postal Savings Bonds (par $6000)	4500.00
One U. S. Defense Bond (par $5000)	3700.00
Five (5) U. S. Defense Bonds (par $1300)	962.00
Total Assets	$15,585.85

GERTRUDE L. FIFE, Treasurer.

Certificate of Audit

I have examined the books and records of the Treasurer's Office of the American Association of Nurse Anesthetists for the fiscal year ended August 31, 1942, and I hereby certify that such records are maintained in accordance with accepted bookkeeping methods and that in my opinion statements accompanying this report correctly reflect the financial transactions for the year then ended.

Respectfully submitted,

(signed) JAMES V. ROSE, Auditor

TRUST FUND COMMITTEE

No changes have been suggested in the Trust Fund document.

The committee wishes to call attention to the following ruling incorporated in the Trust Fund Resolution which was adopted at the annual meeting held in Atlantic City, N. J., September, 1937:

> "Beginning with January 1st, 1943, each State Association of Nurse Anesthetists shall contribute to this Trust Fund Ten Cents (10¢) per each member in good standing and shall keep an accurate record of all such payments to said Trust Fund, in addition to such records which shall be kept by the Treasurer of said Trust Fund of the American Association of Nurse Anesthetists."

The committee recommends that the present Secretary and Treasurer of each State Association and those elected or appointed in 1943, be notified of this ruling.

Respectfully submitted,

VERNA M. RICE, Chairman
GERTRUDE L. FIFE, *Treasurer*
IDA TEDFORD ELLIS

PUBLISHING COMMITTEE

Financial Statement:

SURPLUS in Publishing Fund August 31, 1941		$ 600.20
Publishing Fund accumulated September 1, 1941 to August 31, 1942 (subscription price of Bulletin—50c, deducted from dues of each individual member, plus sale of Bulletins to non-members)	$1354.79	
Income from Sale of Advertising, September 1, 1941 to August 31, 1942	1220.00	2574.79
		$3174.99
Total Cost of Publishing Bulletin, including postage, for year ended August 31, 1942		2964.84
(Total cost of publishing membership list in August, 1942, issue $363.63)		
SURPLUS, August 31, 1942		$210.15

COMPARATIVE STATISTICAL REPORT FOR YEARS 1937 - 1942 INCLUSIVE:

Year	*No. of Pages Exclusive of Advertising*	*No. of Copies Distributed*	*Advertising: No. of Pages*
1937	206	6400	28
1938	232	7075	29
1939	274	8600	30
1940	297	9500	30
1941	356	10350	32
1942	301	11150	27

The surplus in the Publishing Fund last year was $600.20, $444.00 less than the preceding year, and is now reduced to $210.15, pointing toward a substantial deficit at the end of the coming year.

The cost of publishing the membership list has increased steadily from year to year for two reasons: 1st, the constantly lengthened list of members of the Association, and 2nd, the larger number of copies distributed each year, beginning with 1500 copies in 1933 and 1934, 3671 in 1935 and 4600 in 1937, and on up to 11,150 in the fiscal year ended August 31, 1942.

The number of advertising pages sold began with five in 1933 and six in 1934, increasing up to the high point of thirty-two pages in 1941, but the total during this year was back to twenty-seven pages, one less than the total in 1937. Undoubtedly under present conditions we can expect further reduction in the income from this source.

From consideration of the foregoing facts it would appear inevitable that substantial retrenchment will be necessary to reduce the cost of publishing

the Bulletin, unless we can sell more advertising space, or meet the deficit in the budget for the Bulletin by drawing on our reserve fund.

Respectfully submitted,

HARRIET L. ABERG
GERTRUDE L. FIFE
MARGARET F. SULLIVAN
BARBARA BROWN

MEMBERSHIP COMMITTEE

Applications received		413
Applications approved	350	
Applications deferred	10	
Applications rejected	32	
Applications re-studied	8	
Applications held for further information	3	
Applications in committee	8	
Applications returned to applicant	2	

There were ten applications for membership in the organization which the committee felt were borderline cases. In view of the examination program in prospect, we advised them to wait until such time as it was in operation and make application for admission to membership in the organization by examination, and we have listed these applications under "Deferred." We did not wish to discourage these people in case it were found later that they were eligible for membership, and it was our feeling that the Credentials Committee would be better able to judge whether or not they should be permitted to take the examinations.

Meetings have been held once a month this year by the committee and we have continued to find the work interesting. We wish to express our appreciation to the Board of Trustees, to the Executive Secretary and to the State Association Membership Committees for the cooperation that has been given us.

Respectfully submitted,

LUCILLE GOODMAN KELLOGG
MYRN E. MOMEYER
LUCY E. RICHARDS, Chairman

CURRICULUM COMMITTEE

The Curriculum Committee has been active during the past year in further revision of the curriculum.

It is impossible for the committee to make a report at this time because of the special work that is to be presented on the Certification Program. The committee therefore wishes to retain the curriculum in committee for further study.

Respectfully submitted,

EMMA EASTERLING
KATHLEEN STURGEON
ANN DECKER
ROSALIE MCDONALD, Chairman

EDUCATIONAL COMMITTEE

In March, 1942, following the resignation of Miss Hodgins from the chairmanship of the Educational Committee, I was asked by the Board of Trustees to carry on the work for the remainder of the year. The material in regard to the Educational Committee began to arrive in my office on March 20, 1942, and the survey folders were received on the following dates:

March 30, 1942	4 folios
April 5, 1942	13 folios
July 1, 1942	2 folios
July 20, 1942	1 folio
August 1, 1942	1 folio
August 5, 1942	1 folio

The principal project upon which the Educational Committee had been at work during the year was the school survey, and we continued with this program in an effort to obtain as much information as possible for the report to the general membership at this meeting.

Up to date the following Schools of Anesthesia have been surveyed:

Barnes Hospital	St. Louis, Mo.
Baylor University Hospital	Dallas, Texas
Cincinnati General Hospital	Cincinnati, Ohio
Duke University Hospital	Durham, N. C.
Germantown Dispensary	Germantown, Pa.
Grace Hospital	Detroit, Mich
Jefferson Hospital	Philadelphia, Pa.
Jewish Hospital	Philadelphia, Pa.
John Gaston Hospital	Memphis, Tenn.
Long Island College Hospital	Brooklyn, N. Y.
Mercy Hospital	Pittsburgh, Pa.
Ravenswood Hospital	Chicago, Ill.
Sacred Heart Hospital	Spokane, Wash.
St. Bernard's Hospital	Chicago, Ill.
Shreveport Charity Hospital	Shreveport, La.
St. Francis Hospital	Peoria, Ill.
St. John's Hospital	Springfield, Ill.
St. Mary's Hospital	Detroit, Mich.
St. Mary's Hospital	Duluth, Minn.
University Hospitals of Cleveland	Cleveland, Ohio
University Hospital	Ann Arbor, Mich.
University of Minnesota and Minneapolis General Hospitals	Minneapolis, Minn.

Total—22

Surveyed but not tabulated:

St. Vincent's Hospital	Worcester, Mass.

The following schools have not been surveyed:

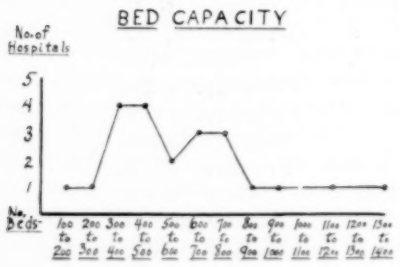
Charity Hospital	New Orleans, La.
Johns Hopkins Hospital	Baltimore, Md.
Mary Immaculate Hospital	Jamaica, L. I., N. Y.
Massachusetts General Hospital	Boston, Mass.
New York Hospital	New York, N. Y.

St. Francis Hospital	Pittsburgh, Pa.
St. Mary's of Nazareth Hospital	Chicago, Ill.
St. Vincent's Hospital	Worcester, Mass.
St. Vincent's Hospital	Portland, Oreg.
U. S. Marine Hospital	Staten Island, N. Y.

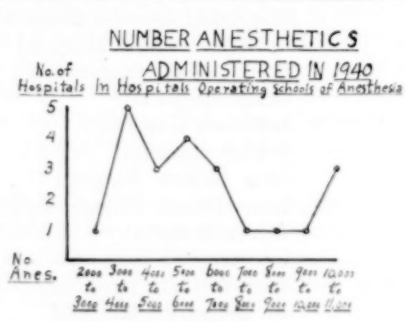
The following new schools also have not been surveyed:

Hospital of St. Raphael	New Haven, Conn.
Maine General Hospital	Portland, Maine
Mercy Hospital	Chicago, Ill.
Mercy Hospital	Council Bluffs, Iowa
Michael Reese Hospital	Chicago, Ill.
Mount Carmel Mercy Hospital	Detroit, Mich.
Norwegian-American Hospital	Chicago, Ill.
Queen's Hospital	Honolulu, Hawaii
Sacred Heart Hospital	Yankton, S. Dak.
Wesley Hospital	Chicago, Ill.

The graphs shown below incorporate a large part of the data obtained from a tabulation of the replies to the questions listed in the folios.



I



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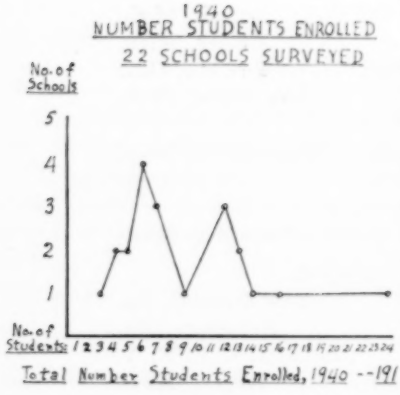
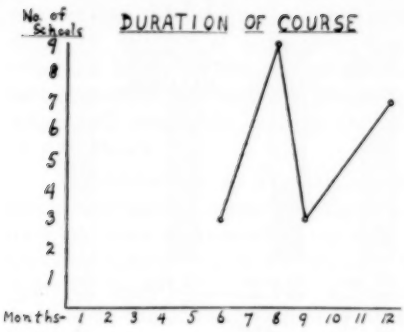


III

REQUIREMENTS FOR ADMISSION TO SCHOOL OF ANESTHESIA

	YES	NO
Name-Address-Age-Race-Religion (Except 2-Do Not Ask Religion)	22	
Graduated From High School	21	1
Sufficient High School Credits for College Entrance	15	7
College Course or College Credits Required		22
Applicant Graduated From Accredited School of Nursing	22	
State Registration Required	21	1
" " Number Required	19	3
Information Required re Institutions Held in Nursing	20	2
References Required From Doctors - two	20	
- one	1	
- others	1	
Require Name of Superintendent Nursing School - ALSO - LAST EMPLOYER	22	
Health Certificate - Recent Date	2	
Also Recent X-Ray of Lungs	14	8
Recent Photograph	1	
Personal Interview where possible	20	2
	22	

IV



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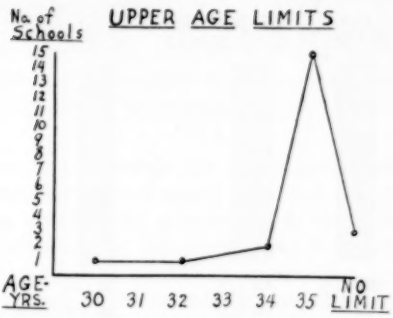

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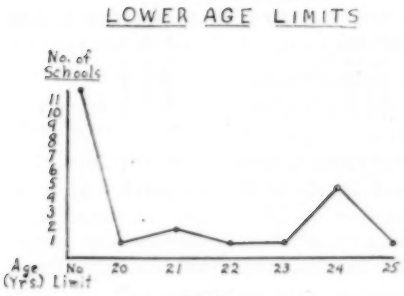
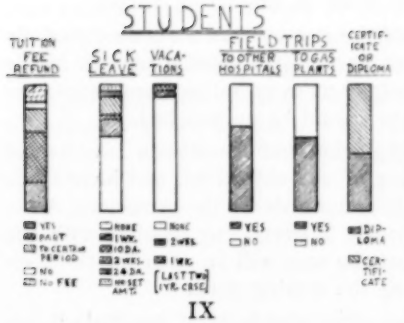


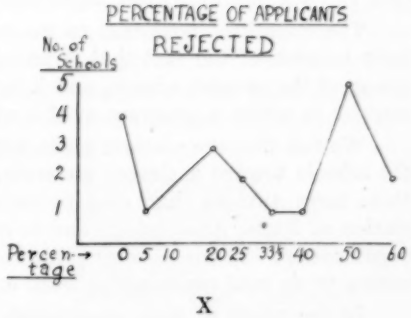
VII

No. of Schools	Tuition Fee	Maintenance	Matriculation Fee
3	None	1- Meals [illegible]; Laundry, Room: 6 mos.; 2-Full	
1	$50[illegible]	None	
1	$70[illegible]	Last two months	$10[illegible]
3	$75[illegible]	1-Ldry, uniforms; 1-Full; 1-meals only	
1	$85[illegible]	Full, except room	
4	$100[illegible]	1-Full; 2-Full, except rm; 1-part of meals	
4	$150[illegible]	3-Full; 1-meals only	
1	$175[illegible]	Full, except room	
2	$200[illegible]	1-Full; 1-Lunches only	
2	$250[illegible]	1-Full; 1-Full for Students outside the State [the School charges $150[illegible] for Students in State]	
1	$275[illegible]	Full	

VIII



IX



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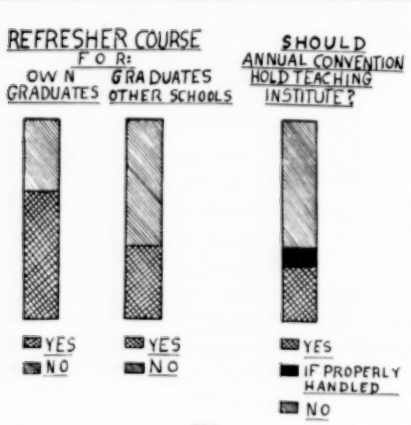
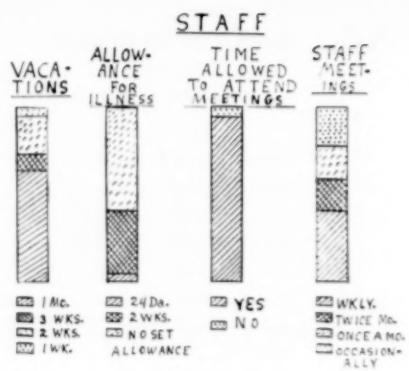
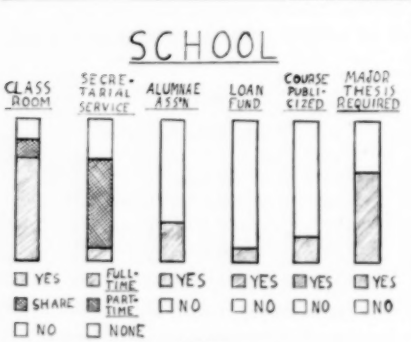


XI



XII



XIII

GRADING OF SCHOOLS

	A	A-	B	B-	C	C-	D	No Grade
SCHOOL	8	7	4		2			1
School Faculty	11	5	3		2			1
Student Body	5	8	5		2			2
Educational Facilities	9	4	6		3			
Curriculum	6	4	6		6			
Teaching Plan-Clinical	6	5	6	1	2	1	1	
Extra Curricular Activities	5	2	6		6	1		2
DEPARTMENT OF ANESTHESIA	8	7	3		4			
Anesthesia Apparatus	12	7	1		2			
Anesthetic Drugs	14	4	2		1			
Administration of Anesthetics	9	5	6		1			1
Obstetrical Anesthesia and Analgesia	9	2	7		2	1		1

XIV

This is the first attempt our Association has made to contact the various established Schools of Anesthesia by sending member visitors from our organization. The results did not give us as great a volume of information as we would have liked, but this probably cannot be corrected until we are in a position to have one individual undertake the work of the school survey.

The committee feels that on the whole the survey was a success, particularly because of the fact that it has given us a fairly definite picture of the set-up of the present schools, and it has helped us to visualize more clearly the manner in which a program of this nature should be approached.

We feel that the contacts made with the Schools of Anesthesia have helped the schools toward a clearer understanding of our objectives, and have made them more anxious than ever to meet the standards of the American Association of Nurse Anesthetists and to cooperate in every way possible with our organization. There is every evidence that the way will be open for the committee to do real constructive work during the coming year.

In the minds of some anesthetists and superintendents of hospitals it has been assumed that the Schools of Anesthesia would be graded or accredited

as a result of this survey. It was not the intention to accredit schools on the basis of the initial survey, but rather to obtain the information needed by our Association relative to the organization of the various schools throughout the country. We are in a position now to discuss with a fair degree of knowledge the set-up of the present Schools of Anesthesia, and we are in a much better position to develop a program which will be helpful to the schools and which will eventually lead to the setting up of an accredited list of Schools of Anesthesia.

Unfortunately as a result of the war the hospitals are experiencing an acute shortage of nurse anesthetists. This has forced many hospitals which have not been interested in training nurse anesthetists previously, to think in terms of taking nurses for training in anesthesia for the duration of the war. Some of these hospitals have tried to organize their course of instruction according to the standards of the American Association of Nurse Anesthetists, but others have merely accepted a few students for training with the idea of meeting their own needs and those within the immediate community. These people will probably fill a needed place in anesthesia during this time, but from the standpoint of the Association it brings up many problems in regard to the eligibility of this group for membership in our organization. Haphazard training in anesthesia will inevitably result in a marked departure from the fine work that has been done by the nurse anesthetist. The examination program which is in process of development will be of great value to us in overcoming some of the problems that face us in the post-war period.

Most of the older schools have enlarged their student body somewhat to help meet the urgent need for anesthetists, and this increased effort represents a valuable contribution.

In March the committee was asked to judge the ten papers submitted to the Pennsylvania Association in the students' contest. As recommended by the committee, the first prize was awarded to Miss Gladys S. Camerer for a paper on "Mortality in Ether Anesthesia," and the second prize to Miss Martha Dennis for paper entitled "The Use of Bulk Ether in Surgical Anesthesia." The committee was disappointed that no graphs were used or case studies made in connection with the papers sent in, and recommended that in future contests provision be made so that the younger graduates might participate.

In May, the Grace Hospital School of Anesthesia Alumnae Association in Detroit made a contribution of five dollars toward a national contest for student anesthetists, but in view of the fact that no contest was held this year, we were obliged to return the check. This donation indicated, however, the interest of the Grace Hospital group in the educational program of the Association.

The committee wishes to express its appreciation for the time and effort so willingly given by the member visitors who participated in the survey.

Respectfully submitted,

DEAN EBERHARDT
SISTER RUDOLPHA
KATHLEEN STURGEON
ALMA WEBB
GERTRUDE FIFE, Chairman

EDUCATIONAL AND HOBBY EXHIBITS COMMITTEE

This is the first year that the Association has had an Educational Exhibits Committee, per se. The committee has made every effort to contact and interest the anesthetists throughout the United States in the exhibit. Many have contributed home-made gadgets they have designed to conserve on priority materials such as rubber and metal. In addition, sterile trays for intravenous pentothal sodium anesthesia were brought or sent to be exhibited. These intravenous sets came from hospitals in the South and the North. The books, journals, approximately five hundred reprints, and the index card file which have been donated to the Association library, were displayed.

Many of the schools of anesthesia showed a great deal of interest by exhibiting teaching charts, records, and student note books. Forms used in the schools were compiled and classified in a special folder. It was interesting to note the similarity in some of the forms and the variability of others. It is hoped by the committee that the schools' directors and instructors will continue to make their annual contributions to the exhibit to show the progress they have made in methods and in teaching material.

With the permission of the Board, a Hobby Committee was selected and preparation was made to exhibit hobbies of various members. These hobbies ranged from collections of china dogs, hotel stationery, music boxes, and obsolete anesthesia equipment to interior decorating, motion picture taking, and handwork.

The committee was anxious to have an exhibit at the annual meeting of the American Nursing Association and National League of Nursing Education in May, 1942, but time did not permit it.

The Educational and Hobby Exhibits Committees appreciate the generous cooperation and contributions which they received from the members of the Association.

The Educational Exhibit Committee wishes to make the following recommendations:

1. That this committee be recognized by the Board of Trustees as a standing committee.
2. That application be made to have an exhibit at the next annual meeting of the American College of Surgeons, the American Nursing Association, and the National League of Nursing Education.

Respectfully submitted,

MARY ELLEN MCCUE
IRENE BOYLES
ELETTA ENGUM
ESTHER C. MYERS, Chairman
Educational Exhibits Committee

BILLIE CARRAWAY
MARY SIM
ANNE BEDDOE
ESTHER C. MYERS, Chairman
Hobby Committee

PUBLIC RELATIONS COMMITTEE

The problems of this committee are numerous, as the term "public relations" is broad in scope. In order to function, it is necessary first to have definite objectives, a workable program, unity of purpose and, most important of all, accomplishment. This applies not only to this committee, but to every committee in every State Association.

The objectives of this committee at the present time are:

1. Definition and regulation of Sectional Assemblies;
2. The outline of a definite program for the State Associations to follow in regard to legislation.
3. Collection of a reference library at Headquarters.
4. Public education.

First Objective: Sectional Assemblies.

Sectional Assemblies may be defined as a group of State Associations joined together for common meetings and the promotion of common interests. Inasmuch as we have the American Association and State Associations, it is recommended to the State Associations that such groups be known as Assemblies. To eliminate confusion, it has also been deemed advisable to strike out the word "sectional" wherever it appears in Articles I and III of the By-Laws, and this recommendation was made to the Revisions Committee.

It is further recommended to the State Associations that these groupings correspond to the groupings of the American Hospital Association and be named as follows:

Carolinas-Virginia Assembly of Nurse Anesthetists:
(Virginia, West Virginia, North and South Carolina)
Mid-West Assembly of Nurse Anesthetists:
(Arkansas, Colorado, Kansas, Missouri, Nebraska, and Oklahoma)
New England Assembly of Nurse Anesthetists:
(Massachusetts, Rhode Island, Vermont, Maine, Connecticut and New Hampshire)
Southeastern Assembly of Nurse Anesthetists:
(Florida, Georgia, Alabama, Mississippi, Louisiana and Tennessee)
Tri-State Assembly of Nurse Anesthetists:
(Illinois, Indiana, Wisconsin and Michigan)
Western Assembly of Nurse Anesthetists:
(Wyoming, Arizona, New Mexico, Nevada, Montana, Washington, Utah, Oregon, Idaho, California, British Columbia, Alaska and Hawaii).

As some of the Assemblies now in existence do not conform to this plan, it is the recommendation of the Board of Trustees that such States give consideration to the establishment of groups which will conform to those of the American Hospital Association.

States desiring to form Sectional Assemblies may do so by making application in writing to the Chairman of the Board of Trustees, such application to be signed by a representative from each State composing the Assembly, one of whom has been elected to act as Chairman.

To clarify many questions that will be raised, the Board of Trustees recommends that:

1. Individual members of unorganized States be granted the privilege of participating in the activities of the Sectional Assembly.

2. Sectional Assemblies carry on the activities of the Assembly by the election of a Chairman and Secretary, the appointment of committees, and without by-laws.

3. There shall be no financial obligation to the American Association of Nurse Anesthetists and any funds raised shall be by agreement of the States involved.

4. As a matter of record, all Assemblies now functioning shall immediately file formal notification with the Chairman of the Board of Trustees of the existence of such Assemblies.

Second Objective: Legislative Program:

In order that legislative problems be handled expeditiously, it is essential that there be a unified procedure for each State to follow, and closer contact with the national Chairman. Therefore it is recommended that each State Association shall:

1. Appoint the Chairman of the Public Relations Committee from the capital city. In the unorganized states, the Chairman of the Public Relations Committee of the American Association of Nurse Anesthetists shall, with the approval of the Board of Trustees, appoint a representative from the capital city of such states.

2. Secure a copy of all existing laws pertaining to anesthesia; one copy to be sent to Headquarters, one copy to national Chairman and one copy retained in portfolio of state Chairman or representative. In most states a reputable lawyer has an index and a copy of all existing laws to date and would undoubtedly grant the chairman or representative the privilege of examining these volumes.

3. Secure copies of bills as introduced. This may be done in a number of different ways and may vary in the different states. In New York State there is a Legislative Publishing Company in Albany which will mail copies of all bills to subscribers. By this method it is necessary to weed out those not of interest to the organization. Each State Hospital Association has a representative who might be willing to keep you informed. There are legislative correspondents for newspapers who, for a small fee, would watch our interests, or some person who represents a number of organizations. All lobbyists must register, consequently this department might be of assistance. I believe the Clerk of the Senate or Assembly could direct any chairman in the right channels, but she must put forth the effort to make contacts and find the people to assist her.

If each state chairman will carry out these three main duties, her committee will function adequately when the occasion demands action. It is also recommended that each Public Relations Chairman make a quarterly report to the National Chairman, because neither the American Association Committee nor the State Committee can function efficiently without contact and cooperation with each other.

Third Objective: Reference library.

It has been recommended by this committee that a Reference Library be established at Headquarters. This does not mean a haphazard collection of

extraneous material, but volumes on all subjects such as law, organization, public relations, education, finance, et cetera, which will be available to all committee chairmen and be an aid to our growth. A Library Committee could be appointed and the states assessed a yearly fee for material and maintenance.

Fourth Objective: Public Education.

A part of the work of this committee is public education, which is of interest to the anesthetists in every state. It is recommended that a Council on Public Education, composed of ten or fifteen members from the Public Relations Committees of the various states, be appointed and geographically distributed so far as possible, to study and put into operation some organized plan such as the following:

1. Brochures to be distributed to all hospitals and schools of nursing.
2. Prepare news releases for the Bulletin.
3. Prepare three appropriate twenty- or thirty-minute talks for clubs, women's organizations, nursing schools, alumnae associations, staff meetings or other groups for use by department heads in giving addresses.
4. A plan to assist the National Hospital Day celebration, with exhibits, et cetera.
5. Plan to hold a meeting of this entire committee during the annual meeting with appointments of sub-committees as indicated.

At the last Advisory Council meeting, the task of devising a plan for the transfer of members from one state to another was delegated to this committee. Such a plan was outlined, accepted by the Board of Trustees and is now in operation. It is hoped that it has proved to be practical and efficient.

The program outlined in this report requires intelligent planning and must be in continuous operation throughout the year. It should promote the willing cooperation of allied groups and every person concerned should do her share in giving others a true understanding and sincere appreciation of the efforts of this organization.

Respectfully submitted:

ROSE DONAVAN,
THERESA HAMMOND,
MARY ROCHE STEVENSON
HAZEL BLANCHARD, Chairman.

Discussion—

Mrs. Frances Hess: Would you explain the suggestion that the states be assessed yearly for maintenance of the library?

Miss Blanchard: My idea was that perhaps a yearly assessment of $10 or $15 be made. It should be uniform in all states. As years go on, that amount of money would materially help in establishing this library and getting the material that we want in the library.

I feel that this material should be of use to the committee chairmen. The chairmen are constantly changing, and they need material to work with. I believe most of us do not want to invest too much of our own money for material we are not going to use after we leave the committee. But this may entail the need of additional help at Headquarters as time goes on in order to take care of sending out and securing the return of the books.

Miss Shupp: Miss Blanchard, I think possibly there may be a little confusion in the minds of the members in regard to the type of material that is desired in this particular branch of the library. They may think that it is scientific books; it is not. It is to be on organization work, is it not?

Miss Blanchard: Perhaps to branch out into the package library as far as the material for anesthesia is concerned. When the members want material for a paper, then the package libraries would take care of that.

Miss Mildred Peterson: I would like to ask about the Assemblies. I come from Washington and we have no Assembly group in that state. I do not believe that Idaho is organized and some of the Idaho anesthetists have written me and asked if they could attend our meetings. We do not meet any Montana girls. We know a few Oregon girls and have no contact with California. Is it advisable for us to have an Assembly? We do meet with the Hospital Association of the Pacific Coast when it convenes and that is the only assembly we have had at all.

Miss Blanchard: The object of the Assembly is to have better programs because of the larger groups and the larger areas from which to draw material. An assembly is very loosely held together.

Miss Peterson: We are so far apart; distances are so great from one large locality to another that we find it almost impossible to meet.

Miss Blanchard: This is the grouping as given by the American Hospital Association. If there were only three or four states out of that group that wanted to join together as an Assembly, I see no reason why they could not do it, and as time goes on other states in that group join them.

The President: The report in full will be published in the next issue of the Bulletin and you can give it further thought and study. If further questions arise at that time, you can write to Headquarters for information. It is difficult to grasp the whole thing at this exact moment.

Miss Meil: May I ask how many anesthetists have an exhibit on Hospital Day in which they show anything pertaining to the anesthetic department?

(Three hands shown).

That would be an excellent medium for publicizing the nurse anesthetist and putting her work before lay people.

The President: That has been a recommendation and probably will encourage those hospitals which have not followed this plan in the past to do it in the future. We could profit much by following the recommendations of the committee.

SPECIAL COMMITTEE

A special committee was appointed during the first part of 1942 to set up the mechanics for the certification of nurse anesthetists by the American Association of Nurse Anesthetists.

The committee appointed for this task was as follows:
Mrs. Gertrude Fife, Miss Helen Lamb, Miss Miriam G. Shupp, Chairman.

The following resolution was presented and unanimously adopted.

RESOLUTION

Whereas: The increased need for anesthetists in the armed forces has created an acute shortage of nurse anesthetists, and

Whereas: It is the earnest desire of the Board of Trustees of the American Association of Nurse Anesthetists not only to maintain the standards already attained, but to raise the standards during this period, and

Whereas: There are now various hospitals opening schools of anesthesia, offering courses of at least six months' duration, whose quality of training it is difficult for the American Association of Nurse Anesthetists to determine, but whose graduates are from time to time making application for membership in this Association,

Therefore Be It Resolved:

1. That during this period the standards of this Association shall not only be maintained, but shall be raised, by inaugurating a program of certification by examination and certification by waiver, thus requiring that the membership in its entirety shall be a certified membership;

2. That each individual applying for membership, in order to become certified, shall have the qualifications now required by this Association and shall be required to take, in addition, an examination conducted by this Association.

3. That all nurse anesthetists already members of this Association and eligible to become certified, shall become certified by waiver in lieu of examination during a designated period, or forfeit the right to membership.

4. That the sum of $10.00, apart from the annual dues, be set as the certification fee, such monies to be used to meet the expenses of the program and to further advance the educational program.

5. That this resolution shall be printed in the convention proceedings, and that proper and sufficient advance notice of the inauguration of the program of certification by examination and certification by waiver, shall appear in the official organ of this Association, the Bulletin of the American Association of Nurse Anesthetists.

NOTICE

At the time the Bulletin was sent to press the full report was not ready for publication. For the present no changes are to be made in State Association routines and policies.

Watch the Bulletin for further notice and full instructions concerning the certification program. In the meantime proceed as usual until such notices appear.

AMENDMENTS TO THE BY-LAWS

Adopted by the Members in General Assembly at the Tenth Annual Meeting Held in St. Louis, Missouri, October 12-15, 1942

Article I, Sections 1, 2, 3, 4 and 5, amended by striking out the word "Sectional" wherever it appears.

Article III, Section 1, amended by striking out on second line the words "and Sectional."

Article III, Section 1-e, amended to read: To report to the Board of Trustees of this Association when and as requested."

Article V, Section 1-b, amended by striking out on line 1 "Initiation" and inserting the word "Application."

Article V, Section 1-c, amended by inserting on line 10 after "Approved" and before "or" the word "deferred."

Article V, Section 1-d, amended by inserting in line 3 after the word "acceptance" and before the word "or" the word "deferment."

Article V, Section 1-e, amended by inserting on line 3 after the word "acceptance" and before the word "or" the word "deferment."

Article V, Section 3-e to become 3-f and amended to read: "An applicant who has not been graduated from a special course in the administration of anesthetics but who was engaged in the administration of anesthetics in approved hospitals for at least six consecutive years immediately prior to 1939 and who has been engaged in this specialty in approved hospitals since 1939, is eligible to active membership."

Article V, Section 3-f to become 3-e and amended to read: "An applicant who, prior to 1939, was graduated from a special course in the administration of anesthetics of four to six months' duration and has been actively engaged in this specialty in approved hospitals since 1939 is eligible to active membership."

Article V, Section 3-g, amended by striking out.

Article V, Section 4-b, amended by striking out.

Article V to have an additional Section to be known as Section 6, Rules and Regulations, Addenda 1-a.

Article XII, Section 1, amended by substituting on line 1 "Application" for "Initiation."

Article XII, Section 2, amended by substituting on line 1 "Application" for "Initiation."

Article XII, Section 5, amended by striking out the fourth, fifth and sixth words, "or Sectional Association."

Article XV, amended by rearranging committees alphabetically.

Article XV, Section 10-b, amended by inserting on third line after "Association" and before the word "and" the words "'from the members."

NOTICE

All dues from individual members and from the State Associations are in the future to be sent to Gertrude L. Fife, Treasurer, 2065 Adelbert Road, Cleveland, Ohio, instead of to Headquarters.

PANEL DISCUSSION

Wednesday Morning, October 14

Chairman—Edith Marcum, Jewish Hospital, St. Louis, Mo.
Coordinator—Miriam G. Shupp, Strong Memorial Hospital, Rochester, N. Y.
Hospital Superintendent—Florence King, Jewish Hospital, St. Louis
Surgeon—Duff Allen, M.D., Associate Professor of Surgery, Washington University School of Medicine, St. Louis
Anesthetist—Rosalie C. McDonald, Emory University Hospital, Emory University, Ga.
Operating Room Supervisor—Lola Baird, Barnes Hospital, St. Louis
Superintendent of Nurses—Miss A. Johnson, Barnes Hospital, St. Louis

MISS SHUPP: In certain institutions nurse anesthetists have functioned for many years; they are familiar to the hospital scene in those hospitals. In most such instances they have had the cooperation and backing of the hospital and have had the opportunity of organizing a well-established anesthesia department. Today in many hospitals the nurse anesthetist is an innovation; she is a strange and rare creature. This is due to the war and the shortage of anesthetists—both nurse and medical.

What are her duties? What are her privileges? Just how should she function within the hospital organization in relation to the various departments she must deal with and from which she must have cooperation if her services are to be satisfactory to that particular institution?

The nurse anesthetists associated with hospitals that have long had this type of service are asking today, What should we do, without sacrifice of standards, to help alleviate the strain in hospitals occasioned by the war? How can we meet the shortage of nurse anesthetists within our own institutions?

The Association is asking, How can we relieve the acute shortage of anesthetists without sacrifice to our standards?

Undoubtedly we will have many answers from our participants in this discussion. First we will hear from a hospital superintendent, Miss Florence King of Jewish Hospital, St. Louis.

MISS KING: When asked to participate in this program, I turned to the back issues of our hospital journals for information on the subject. I found many articles on anesthesia but I blush to report that the majority dealt with such problems as

1. The Department of Anesthesia as a *Source of Income.*
2. Avoidance of *Legal Responsibility* in Anesthetic Accidents.
3. The perennial debate—*Nurse Anesthetist versus Physician.*

But I found scarcely a word about that person of prime importance—*the patient.*

In their enthusiasm for increased revenue, most of the writers had forgotten all about the patient while devoting paragraph after paragraph to the money side of the picture. And, when they got through with cash receipts, they gave over the balance of the discourse to the legal loopholes through which hospitals doing a large percentage of charity work might avoid all responsibility for mishaps. A few writers dwelt on the prevention of explosions, but even in this respect their chief thought centered on their being held blameless and not on the patient's inherent right to safety.

I was reminded of an experience in my own life when I bought my first automobile and was approached by an agent who wanted to sell me liability insurance. I am ashamed to admit that I blithely replied, "I don't own property so no one could get anything out of me." To my shame, I recall the expression on that man's face as he said, "You don't mean what you are saying. If you injured anyone, wouldn't you want at least to make what financial restitution you could? Would you want to evade your *moral* responsibility?" I bought the insurance.

My forebears came from Scotland, and nothing makes me happier than to see our hospital receipts soar from month to month. But, paradoxical as it may seem, I propose this question: Isn't it time for hospitals to stop letting the dollar sign obliterate their view of the patient, and to remember that, as in all phases of hospital work, in the field of anesthesia it is the patient and our moral obligation to him that should come first? Instead of spending our time thinking up ways to dodge legal liability, should there be an accident, let us focus our attention on providing excellent and safe anesthesia service for the benefit of the patient.

How can we do this?

1. By staffing the department of anesthesia with qualified and experienced anesthetists.
2. By supplying and maintaining adequate equipment.
3. By providing safeguards to prevent accidents in handling of explosives.
4. By educating the public to understand and appreciate the part that anesthesia plays in the patient's ultimate recovery.

The hospital administrator who overlooks his obligation to provide these four essentials is derelict in his duty. The average administrator acknowledges his duty as regards personnel and equipment and safety measures to prevent explosive hazards, but does he realize that disseminating information about anesthesia is equally important?

In the first place, the patient who pays $15 or $20 for an anesthetic frequently wonders why he should pay what he considers an exorbitant fee for a tiny whiff of ether. Unless he knows all that goes into that charge he may lose confidence in his hospital or surgeon and feel that he has been gouged.

In the second place, the average person is fearful; to him, in his condition of physical and mental distress, having the mask placed over his face is a lurid and unhappy prospect. Allaying these fears is another of the administrator's responsibilities to the patient.

But how can we explain the whys and wherefores of anesthetic charges and at the same time convince the patient that there is no need to be afraid? There are two ways:

Hospitals everywhere are sponsoring programs of public education and, through the medium of the radio, newspaper or hospital bulletin, are given many opportunities to describe their activities. They like to boast of their excellent x-ray equipment and to brag about the number of babies born in the obstetrical department last year. Why not devote some time to an intelligent exposition of the Department of Anesthesia, dwelling on the educational background of the anesthetist and the skill with which she works and maintains her equipment? Why not assure the public of the safety with which anesthetic gases are administered and impress it with the fact that by actual records it

is claimed that the surgical postoperative period has been reduced by two days since the advent of professional anesthesia?

The next step in reassuring the patient and allaying his fears reverts again to the administrator's obligation to employ an anesthetist who with her poise and personality, her profound respect for human life and her thorough understanding of human nature can inspire confidence in the patient and assure him physical and mental relaxation. The administrator is duty bound, out of deference to the patient, to select for the department anesthetists who not only are well grounded in the basic requirements of their specialty but are also well versed in current professional literature and are eager to keep abreast of the rapid changes taking place in the field of anesthesia. He owes it to the patient to provide channels for the anesthetist's self-development, not the least of which is attendance at professional meetings and conferences where she can enrich her store of knowledge, hear of new developments and see improved types of equipment. On the other hand, in his eagerness to have his anesthetist develop professionally, the administrator must not overlook her need for physical and social happiness. The anesthetist who is so tied down with professional duties that she has no opportunity for play or relaxation is likely to grow stale.

One should also beware of the anesthetist who, of her own volition, limits her interests to her profession and smugly asserts that her work is her life and she has no time for cultural and social pursuits. Not only will this stupid attitude be reflected in the character of her work, but also will it seriously affect her relations with the surgeon and the patient, for whom it has been said she acts as the liaison officer. No surgeon has respect for a sanctimonious dullard who has no hobby or outside interest. Just so, the patient will find it difficult to respond to a dowdy anesthetist with negative personality when she makes her preoperative call to gain his confidence and study his anesthetic requirements. The administrator should find it incumbent upon him to employ the anesthetist who will be a credit to the hospital both professionally and culturally and who will merit the respect of surgeon and patient.

Just as in the adage that "A chain is no stronger than its weakest link," so no hospital is better than its poorest department. It is up to the administrator to see that Anesthesia is accorded the dignity it deserves and is as strong a department as every other in the hospital chain. That is the administrator's responsibility to the patient.

DR. ALLEN:

(Copy of Dr. Allen's remarks not received when Bulletin went to press.)

MISS SHUPP: We will now hear from the Operating Room Supervisor, Miss Lola Baird of Barnes Hospital, St. Louis.

MISS BAIRD: May I begin by saying that if ever there was a time in the history of our country when a tolerant understanding and completely cooperative spirit was necessary, that time is now. We have certainly not begun to see the worst of the effect that this war will bring to us. Within six months what we are going through now may seem, in retrospect, like simple play. We are going to have very trying times and cooperation is necessary.

The exacting details of various hospital procedures are rapidly becoming simplified both in personnel and material because the present-day crisis demands more in time and energy and capacity than is humanly possible. Short cuts and substitutions are employed in all phases of hospital life. All

hospitals today are suffering from a shortage of personnel. I will give you a few figures from Barnes Hospital.

In 1940 the graduate personnel of the operating room consisted of forty-three nurses—a large enough number to take care of each patient coming to the operating room. The number of operations performed in that year was 10,569. Today the personnel consists of twenty-eight nurses—not quite half. The number of operations performed in 1941 was 11,707. So far this year we have averaged nearly a thousand operations per month, so I am inclined to believed that by the end of 1942 the total number will exceed 1941. You can readily see with this shortage of personnel the grave problem that the Superintendent of the Hospital, the Superintendent of Nurses and I have faced. Even though the growing demands of the Army and the Navy have taken a great number of surgeons, the number of operations per day has not decreased.

This personnel problem in our operating room has been solved temporarily and satisfactorily by a close cooperation between the anesthesia department and the operating room nurses. The anesthesia department is now taking care of the patient preoperatively, and by that I mean giving the patient mental assurance that everything will be done to take care of him properly, assisting the patient in transferring from the stretcher or bed to the operating room table and placing the patient in the special position that is necessary for the operation—kidney or chest operation, et cetera. The anesthetists not only assist with placing the patients in position but they play a major part in the teaching of the students. We have student nurses in the operating room and they need a great deal of supervision. They get much of it from the anesthetist.

The anesthetists assist the head nurse in the operating room with the adjustment of the lights, in tying the sterile gowns of the surgical team, giving emergency hypodermic stimulants that are often necessary and when the emergency doctor is busy they often start the intravenous fluid, which consists of glucose or blood. The anesthetists also do numerous other things such as transferring messages, and so on.

The anesthetist is not only taking care of the patient preoperatively but also postoperatively. She sees to it that the patient has a hot gown and blankets and that he is transferred properly from the operating table to the stretcher or bed and usually we have an orderly to accompany the anesthetist back to the room. All of these things that she does for us lessen the burden of the surgical nurses.

In return, the operating room nurses cooperate with the anesthesia department in regard to necessary precautions during the administration of a highly explosive anesthetic. For example, the turning on and off of electric switches and lighting of alcohol lamps, and live cautery and diathermy and so on. By working together in this manner, I feel that each one of us will be able to do our task better and faster.

MISS SHUPP: We will now hear the viewpoint of the Superintendent of Nurses—Miss Johnson of Barnes Hospital, St. Louis.

MISS JOHNSON: Miss Baird has given you a picture of some of the things we have been able to do through the cooperation of the anesthesia department with the nursing department. The anesthetist is one of a large group of hospital employees, all of whom must work together for the common purpose of promoting an efficient organization so that the patient will receive the best

type of pleasant and cheerful service. We as nurses need to work together very closely in order that we may best serve the patient and promote the interests of the hospital. Since the nursing department is chiefly concerned with the nursing care of the patient, I shall try to mention just a few of the ways in which the department of anesthesia can cooperate in the nursing care of the patient.

The anesthetist has a great deal of responsibility for the care of the patient in the operating room, as has already been brought out. That begins with the mental assurance of the patient who comes to the operating room and is rather frightened and bewildered and feels that he is entirely in strange hands.

She also has the care of the patient until he returns to his own room, and when she comes back with the patient she has a good opportunity to give the nurse a report on that patient—the type of anesthetic he has had, how the patient has reacted, and any special precautions that need to be taken by the nurse who is going to care for the patient.

Since a great deal of our work in hospitals at the present time is surgery, the patient's reaction to the operating room is quite often going to be his reaction to the hospital as a whole.

The department of anesthesia can also help us a great deal in teaching both the students and the graduate staff. Miss Baird has already mentioned some of the ways in which she can teach in the operating room but she can also teach the general staff. That can be done through individual instruction and supervision or through formal classes. Some of the ways we have used the department have been in teaching the use of carbon dioxide, oxygen, helium and also the care of the equipment that is necessary in giving some of those gases to the patient.

This type of work helps the nursing department to get better acquainted with the department of anesthesia, and it encourages a more harmonious relationship between the departments. It also helps the two departments to better understand the load each respective department carries, and each department must try to make easier the work of the other departments of the whole institute if the results of this cooperation are to be evidenced.

MISS SHUPP: Mrs. Rosalie McDonald will give the viewpoint of the anesthetist in relation to these various other discussions.

MRS. MCDONALD: I was gratified to hear all the speakers place emphasis upon the fact that the anesthetist has the responsibility of a great deal of the preoperative care and also the postoperative care of the patient. All of the speakers have mentioned the fact that the anesthetist has much influence on the patient preoperatively—on his psychic condition.

Miss King, in her talk, mentioned that she placed importance upon supplying the anesthetist with good equipment. I agree with her. I wish all hospital superintendents were of the same opinion on that point, and also that the anesthetists should have sufficient help to allow them recreation periods and hours of rest. I was glad to hear Miss King say that she felt that the anesthetist was a human being and not a mechanical piece of equipment that could run indefinitely.

I think Dr. Allen is quite right in stressing the fact that there should be a sympathetic understanding between the anesthetist and the surgeon for each to do his best work. Where there is any personal feeling between them, or not

a complete understanding about the evaluation of a patient's condition preanesthesia, it is very difficult for the anesthetist to carry the patient through the operation in the best manner. I think the patient is always the first consideration and the surgeon comes next. If there is no patient there is no surgeon and no anesthetist.

I can see that Dr. Allen is a very loyal supporter and friend of the nurse anesthetist. I was glad to hear him say that he felt the anesthetist should have the responsibility of placing the patient in proper position on the table, because I think the position plays an important part in keeping the patient in good condition on the table. If a patient's respiratory excursions are limited any more than is necessary, it is hard on the patient. I think the anesthetist should have the responsibility of placing the patient on the table, or the direction of it, and I also think she should be responsible for transferring the patient from the operating table to either carrier or bed. It is not always possible for the anesthetist to take the patient back to the room. The anesthetist must often be available to start another anesthetic immediately.

In regard to what Miss Baird said about the anesthetist being able to help the operating room nurses in some of their duties, I realize that cooperation and tolerance should be the keynote at all times and it should be stressed more now than ever because of the shortage of help. I cannot understand, however, with the shortage of anesthetists, how the anesthetists can assume more responsibility in helping the operating room nurses in tying the doctors' gowns, et cetera. I do not see how the anesthetist can leave the patient in order to tie the doctor's gown. I am always watching my patient's condition and I cannot understand how an anesthetist could assume any more responsibility than she already has.

It is true the anesthetists are helping by receiving the patients and reassuring them mentally. The anesthetist is the one who sees the patient first in the operating room and it seems to me that she should always be the one to assure the patient. This rightfully should be done by the one who is going to administer the anesthetic, and many times patients have more fear of the anesthetic than they have of the surgery.

Miss Johnson spoke of the anesthetist being able to be of great help to the nursing department in teaching the nurses how to give better and more intelligent postoperative care to the patient, and she also spoke of the anesthetist being of help in reporting the patient's condition. I think all anesthetists should be very careful about reporting the patient's condition to the person who receives him on the floor. I also think, from an anesthetist's point of view, a great deal of help could be given to the nursing department by the chief anesthetist if she were given the privilege of talking to the supervisors and student nurses on pre- and postoperative care of patients—phases important to the care of the patient—that these people are not given in their nursing lectures. They are not or may not be able to evaluate the patient's physical condition as keenly as the anesthetist.

MISS SHUPP: We will now have questions and discussion from the floor.

MISS SALOMON: I have two questions, one for Miss King and one for Miss Johnson. I'd like to ask Miss King what our Association can do to encourage the hospital superintendent or administrator to employ only members of our Association.

MISS KING: I think perhaps an educational program through the hospital journals might be of benefit. In our hospital we always look to the Associa-

tion to supply us with anesthetists; we always employ dietitians who are recommended by the American Dietetic Association. The anesthetist can help educate her administrator.

I know that my dietitian would protest if I wanted to employ a dietitian who was not a member of the Association. The anesthetist can guide her administrator, who should be eager to know about the Association and the advantages that would accrue to the hospital through employing members of the Association.

I think that there should be a little more information on the subject in our hospital journals. I do not know whether it is our fault that we do not approach the anesthetists to educate us more but through meetings like this we all get together on these subjects and know more of each others' problems. I am sure I would welcome more in our literature. When I began to read on this, I found a scarcity of literature for me, an administrator. I think you people ought to do a little writing and submit it to some of our hospital journals. I do not read your anesthesia literature—I don't have the time, but I think you ought to wedge a little into ours so that it will be before us and we will read it and know more of your Association. It is up to you to educate the administrators and we should welcome it.

In behalf of the administrators I would like to say that I appreciate the work done by the nurse anesthetists. I think you ought to know that we are all trying to do our best. I don't believe any of us want to impose on the anesthetist but we're just up against it. The work has increased and we cannot increase our staff—not that we won't pay for any more but we cannot get more anesthetists. We want to do all we can in the department of anesthesia but we have our problem and we can't do any better at present.

MISS SALOMON: I would like to ask Miss Johnson if she feels that the department of anesthesia can function satisfactorily under the nursing department rather than under the superintendent of the hospital or medical director, as the case may be.

MISS JOHNSON: I don't see any reason why the anesthesia department should function under the nursing department. It is really a separate department and should be under the superintendent of the hospital. That is the arrangement that we have. I think Miss King has the same.

MISS SALOMON: There are so many hospitals where the anesthesia department is under the jurisdiction of the superintendent of nurses and so many of the anesthetists have complained about constant friction. I just wanted your view.

MISS JOHNSON: I feel that it should be a separate department. I think we work very well with the head of the department of anesthesia.

MISS SHUPP: There is one very important point that has not been brought out by anyone as yet. I should like to ask how many in the audience have recovery rooms in their hospitals, either as a routine thing or as an emergency measure? (four hands shown).

MISS MEIL: The return of the patient to the room has been a big problem in most hospitals. In our hospital we have all graduate anesthetists and we have one to each room—six anesthetists. If we take the patient back to the room, which is a twenty-minute trip, as our operating room is in one corner of a sixteen-acre lot, who is going to start the next anesthetic? As it is, we have the interne take the patient back.

Also, when the anesthetist is looking after all the utility nurse's work, who washes the gas mask and bag promptly after an ethylene anesthesia? Also, does the anesthetist adjust lights at the time she is giving an explosive anesthetic? Those things have all been brought up in our institution. Lots of times the surgeon adjusts the light. I do not feel that I am adhering to a safe technique if I adjust a light when I am giving an ethylene anesthesia.

DR. ALLEN: I have very, very definite ideas about getting the patient back to the room. I think the patient should be accompanied by a responsible, trained individual. The one most logical for that is the one who has been giving the anesthetic, who has been taking the blood pressure and with her finger on the pulse. If she cannot, then you should have someone who is trained and capable of recognizing an emergency on the way back to the room. An interne can do that but not as well as the anesthetist. In regard to adjusting lights, I leave that to the nurses.

There is one thing I want to say while I am on my feet in regard to how we are going to get help. I think that we must all realize more and more that we can't go on as we have been heretofore, I can't come into the operating room and say, "It's not my job to do this as a surgeon." I can't go over and sit down on a stool and the interne come in and stand there for five minutes waiting for somebody to tie his gown. I've got to get up and tie his gown—which of course has been far below the dignity of all the surgeons, but we are going to have to do those things.

The thing that is puzzling all of you here is the number of things the anesthetist has to do. You didn't get Miss Baird quite right. She said the student anesthetist did all those things. We wouldn't let just one anesthetist be in the room. For the last five or ten years there has always been more than one there. I would feel uncomfortable now if I found only one nurse anesthetist in the operating room. That is a local condition because we have a school. But if there is only one anesthetist I would not want her to get up off that stool at all. I would want her to stay right there. I don't want her to give a hypo or anything else.

MISS SHUPP: We had four hands in answer to the question—Does the institution have a recovery room, either as an emergency measure or as a routine of the hospital? I should like to have one of those individuals answer this question.

MISS SALOMON: In our institution we have a recovery room adjoining the men's surgical department, the women's surgical department and the children's ward. Patients who have received gas anesthesia, local or spinal, or patients who are conscious, are taken back to the ward and placed in their beds. Patients who have had general anesthesia and are unconscious or semiconscious are put into these recovery rooms where there is one student nurse to care for the patients. The patients remain in the recovery room from twenty-four to thirty-six hours or until they are able to be transported to their own bed. I have one of my student anesthetists circulate between the three recovery rooms to make sure that the patients have a free airway and are not in a draft, although the nursing department usually takes care of that.

MISS SHUPP: We set ours up as an emergency measure. The doctors objected strenuously to their private patients, ward patients, children, men and women being put into the same room. It is much too small, but it is the only room available. It accommodates eight beds comfortably but sometimes it is necessary to crowd in extra beds.

There is suction, there are stimulants, there is everything there that a nurse could possibly need, plus a telephone. A graduate nurse is in charge. She has been there since the inception of the recovery room. The anesthesia personnel has trained her to be a good nurse for that purpose. She told me the other day that she had become aware of a lot of things she had never realized before in watching patients come out of anesthesia, and she is much more valuable now than she was at the beginning.

With that nurse in charge and with the anesthesia personnel, we try to give the student nurses who serve a period of time in the recovery room a training in the postanesthetic care of patients. We have had within the last six weeks three aspiration pneumonias on emergency cases who were operated upon after the recovery room closed in the afternoon. During that same period, with all the patients going to the recovery room from 8:00 in the morning until 4:30 in the afternoon, we had one postoperative pneumonia.

Now the question arises, even though one nurse is watching the patient, if that nurse is not properly trained, is she able to evaluate the dangers when an emergency arises? We feel that we have cut down our postoperative complications by having a recovery room. The nurse does not have to watch more than three or four patients at most because as soon as the recovery room fills up she immediately calls the surgical division for extra help. In this way there is always a sufficient number of nurses in the recovery room to watch those patients properly who are recovering from anesthesia.

The patients do not object to it because as soon as they are conscious they are returned to the division. Occasionally an adult will object to the crying of a child but it is only for a few minutes. The floor is notified as soon as a patient is conscious and ready to leave the recovery room. Someone from the floor then comes to transport the patient back to the division.

The anesthetist takes the patient to the recovery room and gives the patient into the care of the nurse. We have found this most satisfactory. Our only objection is that the recovery room has been set up a little distance from the operating room. If a new operating suite were being built, I would suggest planning for a sufficiently large-sized recovery room so that all patients would be placed in there and no unconscious patients ever returned to the floor.

I think the student nurses get better training because they have the opportunity of seeing more complications in a recovery room than they would probably see if they were watching patients individually on the floor. With trained personnel in charge of the recovery room complications can be interpreted to the student, and this knowledge will make her a better surgical nurse. I am sure when the war is over we will not go back to the old way of having our patients recover in various rooms throughout the hospital, being specialed by one nurse.

MRS. MCDONALD: Does the recovery room include patients from the private pavilion?

MISS SHUPP: All patients regardless of status. The only exceptions are patients who have special nurses. These patients go directly to their rooms and are in the care of their special nurse.

MRS. BROWN: May I ask if the families outside are notified that the operation is over and the patient is all right but in the recovery room?

MISS SHUPP: The nurse in charge of the floor from which the patient

comes notifies the family that the patient will not return to the floor until she is conscious—that she will go to the recovery room and they will not see her until sometime in the afternoon. If there is any question the nurse tries to explain the advantages of the recovery room.

MISS PETROWSKY: In transporting your patient back from the recovery room to the ward, who is responsible for that move? Do you leave that to a student nurse?

MISS SHUPP: It is always a nurse from the division. It is simpler for them to come to the recovery room and transport a patient to the division. Our problem is simplified because our patients are never on a stretcher; we use beds.

MISS LAMB: Is the nurse in charge responsible to the anesthetist? Do you direct and guide her in the manner in which the patient should be taken care of? Or is she responsible to the superintendent of nurses?

MISS SHUPP: She is under the superintendent of nurses but we guide and teach her; we help the students as much as we have time for these days.

MISS LAMB: But you don't stay in that recovery room?

MISS SHUPP: No, but we are on call for emergencies in the recovery room.

MISS BAIRD: What do you do in regard to isolated patients? Do they go into this room?

MISS SHUPP: No. If there are any patients on isolation, they are specialized on the floor from which they come. If a patient has a slight cold or anything that might be communicable to the other patients, they are not placed in this room.

MRS. GULOTTA: I wonder if the anesthetists feel that we should be responsible for placing the patient in position on the operating table. It seems to me we are responsible only to the extent that the position is arranged correctly by the surgical nurses so that it does not interfere with respiration. It takes time to place a patient in position, and we have our work to do.

MISS SHUPP: Miss Baird comes from a hospital where there is a school of anesthesia, and as Dr. Allen said, never less than two anesthetists in a room. The problem is different. In our institution, where we do not have a school of anesthesia, we do not have the time or the number of people to place the patient in position.

DR. ALLEN: I think it is the duty of the anesthetist to see that the patient, if it is a kidney operation, is put in the proper position on the operating table. I think the anesthetist ought to see to it that the patient is in the most comfortable position and least likely to be out of joint when he wakes up the next day.

MISS SHUPP: Dr. Allen, what is your personal opinion about placing a patient in position before he is anesthetized? Do you feel that the effect of putting a patient in a complicated position, such as kidney position, before the anesthetic is started, is the right thing to do, or to take a chance on having a muscle stretched if they are anesthetized in the dorsal position and then placed in the kidney position?

DR. ALLEN: I do not think I can answer that question as well as Miss Lamb because she has watched these patients and of course I don't do kidney operations. I don't believe my opinion on that would be good.

MISS LAMB: I feel that the patient should not be put in position before the anesthetic is started. He should be in the most comfortable position for him when he is awake. While it might be less difficult to have the patient move himself prior to anesthetization, I think it is infinitely preferable to put him in position after he loses consciousness.

MRS. FIFE: I feel as Miss Lamb does, but I don't think it is possible today. Certainly we don't have sufficient personnel to move a big, heavy man into position after he is asleep. We used to put our patients to sleep on their back but we found it was absolutely impossible to get them in position afterwards due to the shortage of help.

DR. ALLEN: Another thing, I think it is wrong to have the patient lying for a long time improperly supported. And in lifting the patient, he should have someone hold him under the middle of the back, the anesthetist should be at the head and somebody at the feet.

MISS SCHWARTING: I was going to comment on putting the patients to sleep in the position in which they will be operated upon. We do that regularly and we do not find that the patients react unfavorably in a nervous way. Their pulse and blood pressure do not register any apprehension but they really become quite interested in finding a position that is comfortable for themselves. They are very cooperative and we find no difficulty at all.

In regard to lifting the patient, we conceived the idea of making a miniature cellar door. We use a piece of wood about twenty-four inches square; we also use a muslin lifter that is about twenty-four inches wide—a hammock. We roll the patient slightly, slip the plywood under the lifter and then let it go about to the middle of the back, let it extend out over the middle of the cart and the patient gently slides down. The anesthetist does not have to bear the whole weight of the shoulders and the head, which is considerable in the heavy patient. The person who does the sliding works scarcely at all, and the person who carries the feet usually has the easy time. We take our cellar door with us and tip the patient a little and slip the board under him, let the other end extend over the bed and he is slid onto the bed. It has eliminated all sore backs.

MISS BAIRD (Ann Arbor): We place our patients in position in our thoracic department and get them fixed in position but not snugly strapped. The patients become very much interested. We see that the patient is perfectly comfortable and relaxed in that position before we start the anesthetic and then when he is asleep we tighten the straps to hold him in that position.

MISS SHUPP: We are very grateful to the participants in the discussion for giving us this time during a busy convention. Thank you very much.

INSTRUCTORS' SESSION

THURSDAY MORNING, OCTOBER 15

The session was called to order by Mrs. Rosalie McDonald, acting in the place of Mrs. Fife, who had been called home the previous evening. Chairman McDonald pointed out that while members of the assembly had been invited to attend, the session was designed primarily for instructors, to whom the questions and discussion were particularly pertinent. A previously prepared list of questions was distributed, and members asked to call up for discussion those in which they were interested.

Miss Exire O'Day asked that Question No. 6 be discussed, *Should students be allowed to remain out after 12 o'clock midnight?* Sister Borromea felt that if students are out late, they are physically unfit for duty the following morning. Miss Salomon agreed that when students come on duty in the morning they should be fresh and ready for work, and stated that at her school they do not permit students to remain out after midnight at all, and permit them to stay out until midnight only one night a week. Mrs. McDonald raised the question of a practical method of control in those schools where no maintenance is given the student and where the student lives outside the hospital. Miss Baird asked what schools demand that their students observe these rules, to which Mrs. McDonald replied that at Barnes Hospital the students in the School of Anesthesia are required to live in the nurses' residence, and be strictly governed by the rules and regulations of that residence. (Miss Lamb, Director of that school, was at that time conducting a clinic, and therefore could not be present to participate in the discussion). The chairman asked a show of hands of schools whose students live in the nurses' residence, and of those who do not. Result was: 6 schools represented do, 8 schools represented do not. Among the latter, Sister Borromea mentioned that at her school they have a residence for the student anesthetists, separate from the nurses' residence, and Miss Willenborg stated that while at her school the students do not live in the nurses' residence, and are under no actual rules concerning late hours, as a practical matter the instructors could readily identify occasions when a student did stay out until hours which interfered with effective work.

Miss Salomon asked that Question No. 4 be discussed, *When should students be placed on night call? Should students ever be left on night call unsupervised?*

Miss O'Day stated that her students are placed on night call about three weeks after entering the school, but since there is always a supervisor on night call in both surgery and the obstetrical division, the students are never left unsupervised during night calls. Miss Mabel Courtney stated that at her school, fourth month students are put on call for ether anesthesia, and fifth month students for gas, until 10 o'clock at night, after which the interns take the calls. If there are more cases than can be handled by the two interns, then the student anesthetist takes the third call. During all this call time, Miss Courtney is available at the nurses' residence, just a short distance away. The interns have had instruction in anesthesia, and while they do not give cyclopropane, they are familiar with the technique for endotracheal anesthesia and give pentothal sodium. Sister Rudolpha stated that her students are put on call the sixth month. Sister Borromea stated that her seventh month senior student anesthetist (accompanied by junior student

anesthetist) takes full responsibility at night, excepting for gas on the obstetrical division. A supervisor sleeps on the same floor as the operating room, where she may be called at any time.

Miss Nichols then asked that Question No. 7 be discussed, *Should students be allowed during the course to work part time at nursing to help defray their expenses?*

Sister Borromea stated that at one school in Chicago, the student, after a full morning in the operating room, does floor duty for eight hours (from 2:00 to 11:00 P.M., aud pointed out that such a practice, which prevented the student from taking afternoon class work and getting proper rest, could be greatly improved by permitting the student to complete her course in anesthesia in the normal way, and then retaining her at the institution after her graduation, at a salary to be divided between the anesthetist herself and the institution, until the amount of tuition had been paid in that way to the institution. Miss McDonald felt that a student anesthetist should not be permitted to attempt to carry the two responsibilities at one time during the normal course, but that instead, if a student desired to work her way through a one year's course, she should be given her work in anesthesia over a period of say eighteen months or two years, taking part of the work with one class and part of it with another.

Miss O'Day raised the question of our Association setting aside a fund for the purpose of financing students (by loan) for education in anesthesia, which Miss Shupp mentioned would be within the ability of the Association, and which Miss Willenborg felt should become a matter of study by the Board of Trustees. Miss Willenborg and Sister Borromea stated that certain courses in anesthesia had received cash grants from the Federal Government, to finance students desiring to take the subject—in one case the government paying for six months of a nine months' course of training, the hospital paying for the other three months. Another method of financing was mentioned as being agreeable to Mrs. Cameron, namely; the school to accept a promissory note for the amount of the tuition, payable within a year after graduation.

Miss Shupp asked what might be considered the actual cost to the student of an eight months' course in anesthesia, whether it be arrived at by higher tuition and maintenance, lower tuition without maintenance, or a combination of such factors. Miss Courtney estimated the total cost of a nine months' course to be about $355. Miss Salomon estimated the cost of an eight months' course to be about $325.

Miss Willenborg then requested that Question No. 10 be discussed, *Should senior students be sent to other hospitals in the city, to relieve for emergencies such as sickness on the staff of those hospitals? If so, should she receive compensation?* Sister Borromea felt it proper to send a competent student to another hospital. Miss Courtney stated her willingness to send a student if requested, without compensation, but at the agreed responsibility of the hospital to which the student is sent. Miss Salomon reported her willingness to send a student to a hospital short of anesthetists that requests it, but only in the status of student anesthetist. Miss Shupp pointed out the possible legal consequence that could follow if a casualty should happen in the hands of a student, the student being not an employee of the institution at which the accident occurred, but instead a student of the institution which sent her. While Miss Salomon and Miss Courtney felt that neither the school nor the student should receive compensation for the service of a relief student anes-

thetist, Sister Borromea felt that while the student should not receive compensation, the school sending her should.

Miss Gertrude Myers asked that Question No. 13 be discussed, *If student has a difficult personality and does not take criticism gracefully, should she be allowed to remain in the school?* Miss Salomon felt this to be a matter for decision on the merits of each case individually. At her school some students presenting such problems have been molded into good pupils by sympathetic but very firm conference when the occasion arises, whereas others have so definitely demonstrated intractability or unsuitability that they have been dismissed. Miss Baird mentioned that her school frankly states to students upon entry that the first three months are a trial period, after which the student is at liberty to resign or the school may ask her to resign. Miss O'Day reported a two weeks' probation period at their school, followed by a frank and firm conference.

Request was then made that Question No. 15 be discussed, *If student is not good in theory but is excellent in clinical work, should she be allowed to complete the course?* Miss Willenborg suggested the unlikelihood that a really good clinical student anesthetist would be at the same time really poor in theory, particularly, as Miss Shupp commented, if she rated a sufficiently high i.q. to have been accepted by one of the good schools of anesthesia. It was recognized that older students, being further removed from the habit of their school days, might have to work harder to master the theoretical aspects of the subject than younger students comparatively fresh from their school courses, but a condition distinctly not desirable is a student who while glib in theory, masters poorly the clinical aspects of anesthesiology, which are so important.

Miss Crane asked that Question No. 23 be discussed, *Should our Association approve of a short time period of instruction in anesthesia to take minor cases to relieve the more skilled anesthetists during this period of emergency?* Miss Shupp pointed out that Captain Fisher of the U. S. Army Nurse Corps, at her conference with our Board of Trustees during the convention, confirmed the fact that the Army is in some areas giving four months' training in anesthesia, obviously of limited scope. It is expected that anesthetists with limited training will not be eligible for membership in our organization, unless or until they have been made competent by later fuller training. Discussion in which Miss O'Day, Miss Nichols and Miss Roadman joined, developed in some detail questions such as the relative desirability of an anesthetist trained in say drop ether alone, during the emergency period, as against the possibility of no anesthesia service at all in some circumstances, and the postwar problem of the "emergency trained" anesthetist. It was readily recognized that the problem is one which requires study now, in anticipation of its development after the war. Perhaps our schools of anesthesia may design special training courses for the purpose of educating these "limited" anesthetists to the standard of knowledge and skill necessary for full clinical effectiveness and acceptability for membership. Some of these incumbents will probably after the war return to the fields of professional activity which they left (such as public health, private duty, et cetera) to enter the military nursing service that led to their limited training in anesthesia during the war period.

Miss Nichols asked that Question No. 16 be discussed, *If a student has given anesthetic, before entering the school of anesthesia, should she be re-*

quired to take the entire course? Consequent to this question, a very complete discussion developed, participated in by Mrs. McDonald, Miss Shupp, Miss Salomon, Miss Willenborg, Miss O'Day, Sister Borromea, Miss Nichols, Miss Courtney, Miss Petrowsky and Miss Rice. It was the consensus that compromise training was to be avoided, and that whatever the method utilized for training anesthetists who were to be graduated into the field as competent to render adequate anesthesia service generally, their education and training should be such that upon graduation they be specifically skilled in the administration of the current anesthetic agents—cyclopropane, ethylene, sodium pentothal, et cetera (which, while not used in all institutions, are demanded by many), by methods which are becoming increasingly required (endotracheal, venipuncture, et cetera). It was recognized that this might necessitate some schools (whose institution may not use the agents or procedures stated) arranging clinical experience at associated institutions that do use them, but that whatever means of affiliation might be necessary, the training in these modern agents and techniques be given to students who when graduated from the school are expected to be competent to render to the hospitals employing them, full expert modern anesthesia service.

At this point Miss Courtney asked that discussion turn to a question relating to the advisability of shortening courses of anesthesia "for the duration," in order that a greater number of anesthetists might be graduated into the field. Sister Borromea's suggestion was to enroll a greater number in the school, but not to shorten the course. In this connection, however, it was pointed out that some schools are experiencing a considerable reduction in the number of applicants for their course, in some cases scarcely enough to provide them with their normal number. In view of this circumstance, shortening the course obviously would not result in any increase in the number of anesthetists graduated, but instead in a less complete training for those that were graduated. Upon request of the Chairman for a show of hands of those in favor of a shorter course of training in anesthesia "for the duration," no hands were raised. The aforementioned probability of a lessened number of applicants for training in anesthesia from now forward was clearly recognized, and ways and means discussed for stimulating enrollment in order that a greater number might be graduated into the field that is now so short of supply.

COLORED ANESTHETIST

At the request of Meharry Medical College, Nashville, Tennessee, the Board of Trustees at the business session referred to the membership the question of admitting to membership in the American Association of Nurse Anesthetists the colored nurse anesthetist who has completed a course in anesthesia.

Active discussion followed. In view of the fact that opportunity had not been afforded for sufficient study of this subject by the state associations, it was voted unanimously that this question be referred to a special committee, such committee to make a report to the Board of Trustees.

The Board of Trustees was instructed to prepare recommendations for submission to the general membership at the annual meeting in 1943. It was voted to allow the colored anesthetist to attend all scientific meetings of the Association in the interim, and that Meharry Medical College be so notified.

ALUMNAE MEETING

The annual meeting of the Alumnae Association of the University Hospitals (Lakeside) School of Anesthesia was held Wednesday, October 14, 1942, in St. Louis.

The sum of ten dollars was donated to the Headquarters library of the American Association of Nurse Anesthetists, and it was voted to contribute twenty-five dollars to the library of the School of Anesthesia.

Mrs. Fife, Director of the School of Anesthesia, reported fourteen students enrolled in the school at the present time, which included Dr. Felipe Torres from Mexico, who is being trained for the Mexican army and will leave the school on December 1.

The following Lakeside graduates are with the armed forces:

Mary C. Bateman	Edythe McDonald
Bernice Boman	Ann Maysarros
Margaret C. Bruchnechter	F. Ruth Pacini
Orpha V. Foster	Margaret E. Scott
Martha E. Gardner	Ann C. Thomas
Martha Scott Guinn	Clara A. Vezina
Dorothy R. Landis	Kathryn F. Wertz
Mary M. Ludovico	Frances Williams

Ruth L. Davis and Mildred M. Kendall are awaiting orders to report for duty with a hospital unit.

We would like very much to keep a record of all the graduates who join the Army or Navy, therefore we would appreciate having the names of any others to put on our list.

Officers elected:

President	Frances L. Kocklauer University Hospitals of Cleveland
Vice-President	Lillian B. Roy City Hospital, Cleveland, Ohio
Secretary	Marion Bradley St. Luke's Hospital, Cleveland
Treasurer	Anna M. Rothansky St. Luke's Hospital, Cleveland
Trustees:	Esther Pracejus Blue Lucy E. Richards

WANTED

An accurate list of all members in the armed service....if you have friends who have recently enlisted, or know of someone from your hospital or city who has gone, won't you write down the name and address and send it on to Headquarters? Knowing that our members in the service are too busy to write, we are depending upon you to keep us posted.

NOTES FROM HEADQUARTERS

MARY ELIZABETH APPEL
Executive Secretary

Over three hundred members of the American Association of Nurse Anesthetists attended the tenth annual convention in St. Louis October 12-15, 1942. Comments from here, there and everywhere were to the effect that from the opening address of welcome by the Mayor of St. Louis, William Dee Becker, to the final turning over of the gavel by President Helen Lamb to the new president, Mrs. Rosalie McDonald, "this was the most worth-while convention of them all."

For those of you who were unable to take part in the proceedings, you might be interested to know that all of the sessions were well attended; there was a great deal of rapid fire questioning from the floor with equally adept answers from presiding officers; problems of a year's standing were ironed out, and, in general, an air of congeniality with a single purpose pervaded all the meetings.

COLORED MOVIES AND SLIDES

Everyone was grateful to Miss O. Rowene Kling of the Ochsner Clinic, New Orleans, for bringing colored movies to illustrate her talk on "Anesthesia in Perioral Endoscopy and Laryngeal Surgery." Innumerable views were shown of patients under anesthesia prior to and during this very exacting operation.

A dramatic presentation of facts and figures gained from the survey of the various schools of anesthesia and graphically shown on slides by Gertrude Fife, chairman of the Educational Committee, was a high point in the Tuesday morning session.

All enjoyed seeing the colored movies of the beautiful state of Washington as shown by Mrs. Mildred Peterson, President of the Washington State Association, Seattle, Washington.

Down in the Exhibition Hall members waited in line to see an unusually fine educational film, "The Physiology of Anoxia" presented by the Linde Air Products Company.

EDUCATIONAL EXHIBIT

There was lively curiosity and a constant flow of visitors to the educational exhibit booth and Chairman Esther Myers of Detroit deserves a great deal of credit for her display of anesthesia records used by hospitals in the United States; forms used by schools of anesthesia; index cards covering 2,863 reprints on subjects pertaining to anesthesia, and, a graphic chart in color showing where schools of anesthesia are in progress.

HOBBY SHOW

Examples of what the nurse anesthetist does with her "play time" were on display in the hobby exhibit. To mention just a few, Mrs. Nan Rowland of Seattle, Washington, has a movie library containing such films as, "The Fall of the Tacoma Narrows Bridge," "Battle of Oran" and the "Fall of Dunkirk."

Collecting music boxes is the hobby of Miss O. Rowene Kling of New Orleans. This includes a large Teddy bear in red, white and blue, which plays "God Bless America"; a musical alarm clock playing the "Merry Widow Waltz" and a table lamp contributing the "Umbrella Man."

Fine needlework is the hobby of Mrs. Flora Maud Burg, Dothan, Alabama, and her framed handiwork is indeed a picture. She is also adept in the making of sweaters, afghans and dresses.

There is not space to mention all of the hobbies, but on behalf of the entire membership may we say "thank you" for your fine spirit of cooperation.

A. A. N. A. MUSEUM

Four pieces of obsolete anesthesia equipment may be a small beginning, but we expect great things to be added to the Association's museum at headquarters. An ether inhaler used in the very early part of the century—a glass bottle with a two-hole stopper and two glass tubes, one long and one short, was donated by Miss Betty Lank, President of the Massachusetts State Association, Children's Hospital, Boston, and Miss Gertrude M. Gerrard, Peter Bent Brigham Hospital, Boston.

A metal ether mask from the Manhattan Eye and Ear Hospital in New York City was donated by Mrs. Frances Hess, President of the New York State Association, Long Island College Hospital, Brooklyn.

An obsolete Bennett Inhaler, consisting of a face-piece with a rubber cushion, a gas cylinder and a cylinder for holding the valves used in administering gas, and two bags; also, a Vernon Harcourt Inhaler which was brought to this country from England by Dr. Angus McLean of Detroit around 1890, were given to the museum by Miss Myers of Detroit, Michigan.

AND STILL THEY COME

Thanks to the thoughtful and generous friends of the Association, the library at headquarters is steadily growing with fine books on the subject of anesthesia. These are appreciated sincerely and will be in constant use. Here are the latest additions to the shelves:

RESPIRATION, by J. S. Haldane, M.D., LL.D., F.R.S., Fellow of New College, Oxford, Hon. Professor, Birmingham University. 427 pages. Illustrated. New Haven, Yale University Press. Presented by Mr. Jack W. McKernon, Linde Air Products Company, New York City.

THE MERCK MANUAL of Therapeutics and Materia Medica. A source of ready reference for the physician. Published by Merck & Co., Inc., Rahway, N. J. Seventh Edition. 1436 pages. Presented by Henry S. Klein, M.D., Merck & Co.

ADVENTURES IN RESPIRATION, by Yandell Henderson. 307 pages. Illustrated. The Williams & Wilkins Company, Baltimore, Maryland. Presented by Dr. Richard Foregger, The Foregger Company, Inc., New York City.

PRACTICAL LOCAL ANESTHESIA, by Robert Emmett Farr, M.D., F.A.C.S., Minneapolis, Minnesota. Second Edition. Revised. Illustrated with 268 engravings and 16 plates. 587 pages. Lea & Febiger, Philadelphia, Pennsylvania. Presented by Mr. W. H. Stephenson, J. H. Emerson Co., Cambridge, Mass.

CLINICAL ANESTHESIA, a manual of clinical anesthesiology, by John S. Lundy, B.A., M.D., Mayo Clinic, Rochester, Minnesota. 266 illustrations. 735 pages. W. B. Saunders Company, Philadelphia and London. Presented by Mr. H. M. Cook, W. B. Saunders Company.

In the next issue of the Bulletin—look for our Bibliography Service.

BULK U.S.P. ETHER FOR ANESTHESIA

ALBERT W. SNOKE
Assistant Director, Strong Memorial Hospital
Rochester, N. Y.

Read at the tenth annual meeting of the American Association of Nurse Anesthetists held in St. Louis, Mo., October 12-15, 1942.

Bulk U. S. P. Ether for anesthesia is an intriguing subject about which controversy and misunderstanding have raged for many years. Whenever the subject has been brought up among anesthetists, physicians, administrators, scientists, and drug salesmen, (parenthetically, may I state that fortunately some drug salesmen are scientists and unfortunately some scientists are drug salesmen), limited experience and dogmatic statements have been used to draw sweeping conclusions.

It is important before starting any discussion upon this subject to set forth the requirements which one must insist upon when using ether for anesthesia. Safety for the patient, efficiency in the anesthetic, safety for the hospital and relative cost are all factors which are accepted without question as of primary importance in consideration of bulk U. S. P. ether or any other ether. There can be no quarrel with the attitude that cost should be secondary to the other factors mentioned. However, a great deal of well-founded skepticism may be directed toward the individual or concern who insists that ether for anesthesia be used only in small, specially prepared containers with a correspondingly high cost.

The use of small containers for anesthetic ether has been encouraged if not required by the United States Pharmacopoeia regulations. Since at least 1916 the U. S. P. has noted under Ether: "Caution—Ether to be used for anesthesia must be preserved only in small, well-closed containers and is not to be used for this purpose if the original container has been opened longer than twenty-four hours." This has naturally deterred many anesthetists from the use of bulk ether, since it obviously could not be used if one is to comply with the U. S. P. ruling. The recent change in the U. S. P. regulation of ether in which five-pound containers are now approved may lead to some expanded use of ether in bulk, although it must be admitted that this relaxation of the U. S. P. regulation can be classified only as a step in the proper direction.

Opposition to bulk ether has usually been based upon the following main reasons:

1. Fear of deterioration of ether when the container is opened, so that the ether is unsatisfactory for anesthesia
2. Fear of the hazard of handling bulk ether
3. Negligible financial savings

If we consider abandoning the paths so clearly demarcated by tradition, it is necessary that we examine the objections to the use of bulk ether for anesthesia and also that we scrutinize carefully the experience of others who have used bulk ether for anesthesia.

Some time ago a questionnaire was sent to forty-two outstanding hospitals in the United States and Canada.[1] Inquiry was made as to the type of ether used for anesthesia and the cost per pound. The majority of the hospitals reported using small

containers and paying 52 to 78¢ per pound. Six hospitals reported using 27 to 30-pound drums of U. S. P. ether which they put up in small containers for use as anesthesia ether and for which they paid 14 or 15¢ a pound. The experience of these six hospitals has been consistently that the bulk U. S. P. ether has been perfectly satisfactory for anesthesia and that no deterioration or alteration of the ether has been noted. Recently the detailed technique for preparing Bulk Anesthesia Ether has been described by one of these hospitals.[9]

My own hospital has been using 5-pound tins of ether for anesthesia since 1934. The ether was poured into small copper cans and used when required, with completely satisfactory results. Early in 1941 bulk U. S. P. ether from a 27-pound drum was poured into six 240 cc. brown bottles, corked and sealed with gelatin seal. At the same time two ¼-pound tins of a well known brand of anesthetic ether were purchased, one was untouched and the other opened and corked with an ordinary cork. All ether containers were then put aside for one year. At the end of that period all were tested for aldehydes, ketones, et cetera by the Biochemistry Department of the Medical School, and with the exception that the opened and corked tin of ether had partially evaporated, no change in the ether was found, and all samples were considered satisfactory for anesthesia.

We are now buying ether in 27-pound drums, bottling the entire amount at one time in the pharmacy in 250 cc. brown bottles, corking and sealing with a gelatin seal, and are using this ether for anesthesia with complete satisfaction to physician, anesthetist and patient. The pharmacist routinely checks the ether of each new drum after bottling to determine the possibility of deterioration or of impurities. To date he has found no inferior or altered ether. This has been the experience of the other hospitals using bulk ether—the incidence of bulk U. S. P. ether unfit for anesthesia being virtually nil.

Obviously clinical experience alone should not be used when one is considering abandoning the status quo in a clinical procedure. Ample experimental evidence from the laboratories of Gold[3] at Cornell, and from Dooley and his associates,[4] and from Hediger and Chenoweth[5] has demonstrated that bulk ether does not deteriorate when opened, and in one study of 2700 anesthesias, no clinical difference was found in the bulk ether used as contrasted with that in small cans. Our own experience for eight years with 5-pound tins and the experience of the six hospitals in testing their bulk ether before putting up in small containers, bears out the fact that ether is not the unstable product one has been led to believe.

The extreme volatility and inflammability of ether lends very definite weight to the fear of bulk ether from a fire hazard point of view. There is a fire hazard without question and the safety precaution of the National Board of Fire Underwriters[6] should be considered seriously. However, I must question whether this is an argument against bulk ether *for anesthesia* or an argument *against bulk ether*. Virtually every hospital purchases bulk ether, acetone and other inflammables for cleaning and for use in laboratories and in research departments. These reagents are routinely rebottled in small containers without great conflagrations resulting. Bulk ether for anesthesia should be regarded in exactly the same light and a common sense attitude retained.

The factor of cost when weighing the relative merits of bulk U. S. P. ether or ether in small containers

should not be considered in the light of saving per individual anesthetic,[7] but rather the saving to the hospital on an annual basis. For example, the increased annual cost to our own hospital would be more than $1000, if ¼-pound cans of ether were used instead of bulk U. S. P. ether. This represents an added cost to larger hospitals alone throughout the country of between one quarter and one half million dollars—an amount of money worth saving—particularly as it can be demonstrated that equivalent service and quality is furnished.

It should be quite obvious that the amount of ether used per day or year in a given hospital should be an important factor when considering the use of U. S. P. ether in large rather than in small containers. There can be no doubt but that small hospitals and those institutions that use little ether should continue to purchase ether in small containers. Weekly ether consumption of from five to ten pounds, however, would justify the consideration of purchase of five-pound tins or 27 to 30-pound drums.

Recent developments indicate that bulk U. S. P. ether may be more widely used for anesthesia. At the request of the Committee on Drugs and Medical Supplies of the Division of Medical Sciences of the National Research Council, the Council of Pharmacy and Chemistry arranged for Dr. Harry Gold to review the status of this agent. In a review and editorial in the Journal of the American Medical Association of September 5, 1942,[8] Dr. Gold summarized the work that has been done and concluded that the safety of U. S. P. bulk ether for anesthesia appears to have been established. The present wartime needs of tin, copper and iron are additional factors that should encourage the consideration of large drums of ether rather than multitudes of small, specially prepared copper lined tin cans.

It was also pointed out by the editorial of the Journal of the American Medical Association that the present U. S. P. ruling still prohibits ether for anesthesia in containers larger than 3 kilograms. Consequently it must still be considered illegal to ship anesthesia ether labeled "For Anesthesia" in containers which contain more than that amount. However, there can be no legal objection to shipping U. S. P. ether in 30-pound drums and then using it for anesthesia.

The conclusion of the editorial of the Journal of the American Medical Association is as follows: "Superintendents and medical directors of hospitals can assume the responsibility of investigating the possible use of bulk ether in their institutions. The use of bulk ether, at least for the duration of the emergency, will be a contribution to conservation as a war effort. These are times when restrictions and savings bear special significance. Assuming that the evidence is now sufficient to permit the general use of bulk ether for anesthesia, provided the ether meets Pharmacopeial standards, there seems to be no reason why these official standards cannot be changed for the duration of the emergency, so that the restricting statement 'Ether to be used for anesthesia must be preserved in tight containers of not more than 3 kg. capacity' will not prove a legal bar to the general acceptance of bulk ether when indicated."

CONCLUSION

Bulk U. S. P. Ether has been shown to be satisfactory for anesthesia both from a pharmacological and clinical point of view. It presents a means of reducing cost of anesthesia with no relaxation of standards of safety to the patient. Saving of metal and of

labor is made possible by this means. The alteration of the U. S. P. requirements coupled with the recent report and editorial in the Journal of the American Medical Association should encourage all anesthetists and hospital directors to consider the use of bulk ether for anesthesia in their institutions.

References

1. Snoke, Albert W.: Ether Economy or Waste, *Mod. Hosp.* 57:69, 1941 (Aug.)
2. Gold, Harry, and Gold, David: Stability of U. S. P. Ether After the Metal Container Is Opened, *J. A. M. A.* 102:817 (March 17) 1934.
3. Gold, Harry, and Gold, David: The Stability of U. S. P. Ether After the Metal Container Has Been Opened: With Preliminary Results of a Clinical Comparison of U. S. P. Ether in Large Drums with Ether in Small Cans Labeled "For Anesthesia," *Anesth. & Analg.* 14:92, 1935
4. Dooley, Marion S.; Wells, C. J.; Frey, J. C.; Knoff, F. H.; Gable, W. J.; Mordell, J. S.; Beuttner, J. J.; McElwain, C. E., and Bentley, C. E.; Clinical Comparison of Drum and Special Ethers, *J. A. M. A.* 105:1033 (Sept. 28) 1935.
5. Hediger, Ella M.; Chenoweth, M. B., and Gold, Harry: The Use of Bulk Ether in Surgical Anesthesia: The Stability of Ether in Cork Stoppered Metal Containers, *J. A. M. A.* 114:1424 (April 13) 1940.
6. Handling Ether in Hospitals, *National Board of Fire Underwriters Bull.* 115, Jan. 2, 1941.
7. Rovenstine, E. A., and Papper, E. M.; Packaging Ether for Anesthesia, *Mod. Hosp.* 58:96, 1942, (Jan.)
8. Gold, Harry; The Use of Bulk Ether in Anesthesia, *J. A. M. A.* 120:44, Sept. 5, 1942.
9. Clarke, D. A. Technique for Preparing Bulk Anesthetic Ether. *American Professional Pharmacist*, 8:1, Feb. 1942.

Discussion by L. H. Wright, M.D. New York City

It is a privilege to have the opportunity of discussing this paper. As Dr. Snoke has said, the controversy has raged about large can ether and bulk ether, and there has been a great deal of loose talk. One of the outstanding things about this whole subject is that we don't find many anesthetists talking about it. I wonder if there is any significance to that fact!

The change in the U.S.P. XII regarding anesthetic ether I believe is correct. The size of container in which the hospital purchases anesthetic ether should depend largely on the amount of ether used. Hospitals which have good control of their anesthetic agents may be able to make substantial savings by the use of the five-pound container. It may be that some hospitals will wish to investigate the use of U.S.P. non-anesthetic ether, though this is an individual problem and, I think, should be very carefully thought out by the hospital executives and all concerned.

In general, one must be opposed to the use of non-standard products for obvious reasons. The U.S.P. XII regulations are definite, and the burden of proof must be on the user, right or wrong. It will take much

more experience before this can be determined.

I must take issue with Dr. Snoke regarding the saving of 25¢ per anesthesia on ether. Whether we judge our ether costs from the standpoint of a complete open ether anesthesia or whether it goes through a machine, any hospital that uses 25¢ worth of ether per ether anesthesia at the highest price today is using too much ether. At the current price of anesthetic ether, experience proves that from 10c to 15c should cover the total ether cost for the average anesthetic. One can say much about the amount of ether which a hospital uses —the amount of ether which is *used* in the hospital for anesthesia and which is *needed* for anesthetic purposes.

The chemical observation reported demands comment. On the face of it, the study seems sound and convincing. Actually, however, the observation is entirely worthless from an anesthetic or chemical standpoint. There may have been no deterioration or the changes may have occurred and gone to completion. That is, the aldehydes, peroxides, acids, and in turn the acids which formed, acted on the alkali in the glass of the bottle.

Testing anesthetic ether under such conditions is entirely worthless. It doesn't prove that there were impurities or that there weren't impurities present. It is simply a test that shows that at the time the test was made there were no impurities. I haven't seen any report which in my estimation is at all scientific and accurate regarding the impurities in bulk ether and that includes, I think, most of them which have been made. Frequently incorrect conclusions are drawn from them. What effect on the anesthesia these impurities have I don't know. You can find arguments pro and con that they cause complications and that they are innocuous.

There is another very interesting thing about this impurity study. Certainly the manufacturers know that even under very good conditions small can ether, not properly protected, will form impurities, as evidenced by the seizure of ether by the Federal Food & Drug Administration. This phase of the study of bulk ether needs more investigation. Surely it needs further study when one hears no reports of impurities in large can ether when there are many reports of impurities in small can ether. One might draw the erroneous conclusion that small can ether is likely to be impure and bulk ether pure.

We also hear good and bad reports from the anesthetists regarding the use of bulk ether. One group will say it doesn't make a bit of difference; another group will say it makes a lot of difference.

We also hear that the postoperative complications with bulk ether are no greater than with small-can ether. Here again the loose statements don't mean anything because we don't have accurate figures. You may think that I am being a little bit too dogmatic on this, but I think we are talking about scientific matters and we ought to be scientific and not loose in our language, and we should be very definite when we make a statement that we have no more postoperative complications.

How do we know we don't have more? If we have more postoperative complications today than we had three or five years ago, I don't think our surgery in its entirety has improved as it should have. If we haven't made any advances in surgery or anesthesia in the last five or ten years so that our postoperative complications from anesthesia as well as surgery are less than they were, we should do a little self-investigating.

One hospital reduced its ether pur-

chases from over $2000 to about $1000 by better control of the stockroom. Another hospital reduced its ether purchases from approximately $2200 to about $400, entirely because of better anesthesia technique.

It is said that there is no waste from evaporation in subdividing. Perhaps there isn't. I don't think Dr. Snoke is entirely correct when he says that we should only consider the cost of a thousand pounds of ether in large cans and the cost of a thousand pounds of ether in small cans. There is a certain amount of labor involved that the hospital has to pay for in the subdividing, and if you will notice in a number of the articles it has been suggested that the cans be rinsed out, and we know from experience that there is waste in this procedure.

I have talked longer now than I was supposed to when I was asked to discuss this paper, but as a last thought I would like to have you keep this in mind: that the safety of the anesthesia procedure depends largely on the ability and experience of the anesthetist. We should have that posted where we can read it every day. It is very important.

Add to the ability and experience of the anesthetist the use of the very best anesthetic agents that can be obtained and you avoid many of the hazards of anesthesia.

THE NURSE ANESTHETIST IN THE HOSPITAL

FRANK R. BRADLEY, M.D.

Superintendent, Barnes Hospital, St. Louis, Mo.

"And God shall wipe away all tears from their eyes; and there shall be no more death, neither sorrow, nor crying, neither shall there be any more pain: for the former things are passed away."

—Revelation 21:4

Read at the tenth annual meeting of the American Association of Nurse Anesthetists held in St. Louis, Mo., October 12-15, 1942.

Except for "man's inhumanity to man," except that the "dogs of war" are loose again, that prophecy is coming to pass. Pain at operation has been practically abolished. The development of anesthesia has brought this about. Prophecy sometimes comes true: shall we prophesy the future for the nurse anesthetist in the modern hospital? Predictions of future events are always hazardous. In view of that axiom, do we yet have the temerity to combine further a problematical prediction with a controversial subject? The answer is yes. The hospital administrator, whether he likes it or not, must assume responsibility for prediction or prophecy, or prognosis if you will. He must interpret the trend of medical practice, hospital practice, the effect of scientific research, and above all, the trend of public reaction toward medical care. These factors in turn are influenced by tradition, finance, the political temper of the nation, and today, by the effect of total war.

Anesthesia, like most medical and scientific procedures, is evolutionary. It requires the combined efforts of at

least three groups — the hospital, where the anesthetic is usually given, the medical school, where the medical student receives his basic knowledge of anesthesia, and the manufacturing drug company whose business it is to produce the specific anesthetic agent, and we should add a fourth group, the manufacturer of anesthesia equipment.

In any task, coordinated effort is more productive than individual effort, provided the individual has freedom of thought and action. The tendency for each of the participating groups to follow its own practice in the administration of anesthesia and in research, although it may lead to important discoveries, cannot be fully effective without appreciation on the part of the other parties and the application of their coordinated effort. Who will coordinate this effort? As the hospital becomes more and more the center of medical care, it will be the function of the hospital administrator working with the dean of the medical school and his medical staff to furnish the medium for such coordination. How this can be done is problematical and will require much tolerance and patience on the part of all parties involved.

The average physician has neither the inclination nor the training to be a proficient anesthetist. Inclination is more important. Why? Few physicians have the inclination to spend the time and effort required to become a proficient anesthetist. Further, although most interesting, anesthesia is restricted, and unless the physician is interested in teaching and research, it does not require his full effort nor utilize the full range of medical training. The first nurse anesthetists were trained by physicians for that very reason.

I do not know who was the very first nurse anesthetist, but the first record I have found was in 1892 when Miss Alice MacGaw, R.N., became the anesthetist at the Mayo Clinic. In brief, the nurse anesthetist exists because the physician wants and needs her.

What is the desirable arrangement for a Department of Anesthesia? In larger hospitals and in teaching hospitals affiliated with medical schools, it is desirable to have a trained medical anesthetist to be responsible for the instruction of medical students. He should be the liaison between the Department of Pharmacology and Physiology, if not actually in the Department. This is essential for research and for testing new anesthetic agents on laboratory animals. Nurse anesthetists would be responsible for the routine administration of anesthesia. In the hospital, the medical anesthetist would be responsible for the training of interns and residents. The chief of the nurse anesthetists would be responsible for the training of student nurse anesthetists.

Through the evolution of hospitals, the obvious fact emerges that a hospital is more efficient if the services it renders the patient and the physician are under hospital direction. Some surgeons desire to have their own nurse anesthetist, the anesthetist working directly for the surgeon and not for the hospital. Administratively, the Department of Anesthesia should be under the direction of the hospital.

The hospital is rapidly changing from a nursing home type of institution and acute surgical institution to a diagnostic and therapeutic center as well. What is the aim of the modern hospital? It is to be a service arm to the physician. What do we mean by this? We mean to furnish the patient with food, shelter and nursing care, and the physician with an intern staff, with instruments and equipment for diagnosis and therapy. Anesthesia is part of that service.

The physician is much more effective if he can send his patient to a hospital for operation or diagnostic procedure requiring anesthesia. The increased cost of diagnostic services which the doctor needs today, particularly x-ray and laboratory facilities, are such that the doctor cannot afford to continue to have them in his private office, and even without the war, the result is that he is looking toward the hospital more and more for these services. The physician who is required to bring his assistant, his anesthetist, and his instruments to the hospital is handicapped to the extent that he cannot treat as many patients as effectively or efficiently as when these services are furnished. There are physicians and groups of physicians who have organized such a service in their own clinic or hospital, but such an arrangement is simply hospital service. The tendency is for the physician to rely on the hospital for his anesthetist.

New anesthetic agents and new procedures are being produced constantly. This is highly desirable and inevitable. However, many of these agents are so similar in character that it is difficult to ascertain which is the better. It must not be forgotten that one of the functions of a hospital staff is to give clinical trial to therapeutic agents which have been developed. This does not mean that the experimental stage is to be carried out in the hospital. This preliminary work is done in the medical school in its departments of Pharmacology and Physiology and by the drug houses. Experimental animals are utilized for this purpose, thereby saving many human lives.

The major trend is to consider that the hospital is more and more the central factor in medical care. We have already indicated that the public reaction holds the hospital jointly responsible with the doctor for good medical care. This reaction has come about largely because of publicity in most popular magazines, through the governmental agencies and through experience with such institutions as chain stores and standardized services like filling stations, that the public are looking towards the hospital as the center of medical care. The change in our mode of living from homes to apartments and hotels in cities and our improved transportation system, particularly due to the automobile and the airplane, has shifted the population from rural to urban centers and is responsible for the change. Hospitals have made and must continue to make changes to meet this trend.

We have discussed the trend of medical practice, of hospital practice, the effect of scientific research, and the present reaction of the public toward medical care. How are these factors influenced by tradition, finance, the political temper of the nation, and by the effect of total war? As a matter of interest, it might be more interesting to take the topics somewhat in reverse order and consider the effect of war. Anesthesia depends largely upon surgery. One of the first products of war is the surgical casualty. Therefore, it is imperative that anesthetists and schools of anesthesia bring themselves up to date by a few lectures on the newer types of anesthesia. For the same reason, all staff members should study the modern methods of caring for emergencies and the reduction of simple fractures. This insures training for war duty, increases the efficiency of civilian defense, and insures that the hospital can continue a high standard of service to the community that it serves.

The effect of the war is obvious. First, there is a shortage of physicians, and releasing any physician for military duty or for more difficult

medical procedures by employing a nurse is a wise move. However, there comes the limitation imposed by the fact that there is also a shortage of nurses. In order to meet that shortage, there will undoubtedly be a shift in the types of anesthetics used. Already anesthesia for war casualties is turning to the intravenous types. The chief advantage of intravenous anesthesia in selected cases is the saving in time. In treating large numbers of casualties, particularly with a limited surgical and anesthesia staff, time is of great value, and it is conceivable that with the use of intravenous anesthesia in the hands of skilled anesthetists and with a surgeon fully aware of the indications and contraindications of this type of anesthesia that a great many lives could be saved under war conditions or a bombing. Lt. R. B. Phillips points out in "The Military Surgeon" for October, 1940, that:

1. Intravenous anesthetic agents are easy to transport.
2. They are not explosive, and consequently may be used with safety in the presencs of cautery or electricity.
3. They are easy to administer after one has had a careful course of instruction in their dangers.
4. They can be repeated when necessary without ill effect.
5. There is seldom any excitement preoperatively or disturbance postoperatively with intravenous anesthetics.
6. The drugs will keep for long periods of time, and when it is necessary, may be made up into solutions very quickly.
7. Cumbersome equipment is not needed for administration.

May I conclude with this statement: "The nurse anesthetist occupies an important place in many hospitals and when properly trained renders efficient service. Standards for training nurses in the administration of anesthesia are closely safeguarded by the American Association of Nurse Anesthetists."[1]

Today, more than ever, is there a need for the nurse anesthetist. The war makes it imperative that doctors be released for the armed services. The future for the nurse anesthetist is secure, provided she retains her high ideals and raises her training in anesthesiology to the highest degree.

[1] Approval Number Bulletin of American College of Surgeons, October, 1941.

STATE ASSOCIATION ACTIVITIES

CALIFORNIA

A regular meeting of the California Association of Nurse Anesthetists was held on September 15, 1942, at the Sir Francis Drake Hotel in San Francisco. The meeting was preceded by a dinner. Roll-call showed an attendance of forty-eight members and two visitors.

The Program Committee Chairman, Julo Slattendale, reported on the progress being made on the proposed Refresher Course. The committee hopes to have the details of the plan ready for consideration by the members at the November meeting, which will be held at the home of Mrs. Quarles.

The President appointed as alternate delegate to the American Association Convention, Myra Belle Quarles. Mrs. Quarles announced that in the event of her acting as our delegate, she would donate the amount reserved as expense money, to the purchase of War Bonds.

Dr. L. H. Wright of New York City addressed the meeting on the subject "Choice of Anesthetic Agents." His talk was interesting as well as instructive, and was followed by a discussion period.

ARKANSAS

The Arkansas Association of Nurse Anesthetists held its annual meeting October 23, 1942, in Little Rock, and the following officers were elected:

President	Blanch Petty 1863 Chester Street, Little Rock
Vice-President	Catherine Reynolds Sparks Memorial Hospital, Ft. Smith
Sec'y-Treasurer	Eva Atwood Box 330, Fort Smith
Trustees	Martha Brown Davis Hospital, Pine Bluff (Term expires 1946)
	Mrs. E. O. Davis 1210 Schiller St., Little Rock (Term expires 1945)
	Ruth Eldred Sparks Mem'l Hosp., Ft. Smith (Term expires 1944)
	Alice Green Wakenight Sanitarium, Searcy (Term expires 1943)

REFERENCES

CONVULSIONS IN ANESTHESIA

Bailey, H. "Ether Convulsions (Use of Evipal, Barbital Derivative)." *Brit. M. J.* 2: 222-223, Aug. 17, 1940.

Boston, F. K. "Further Case of Ether Convulsions." *Brit. J. Anaesth.* 17: 16-23, Dec. 1939

Boston, F. K. "Convulsions after Vinethene (Vinyl Ether) Anesthesia." *Brit. M. J.* 1:929, June 8, 1940

Bradshaw, H. H. "Impurities in Ether (in Relation to Convulsions)." *Am. J. Surg.* 45:511-514, Sept. 1939

Brit. J. Anaesth. Editorial, July, 1933, pages 143-144

Broad, R. J. B. "Convulsions Occurring under Anesthesia." *M. Press.* 205: 238-240, Mar. 19, 1941

Cartwright, F. "Anesthetic Twitches (Ether Convulsions)." *Brit. J. Anaesth.* 15: 43-54, Jan. 1939

Cartwright, F. "Anesthetic Convulsions: Case." *Lancet 2: 1058-1059*, Nov. 5, 1939

Cassels, W. H., Becker, T. J. and Seevers, M. H. "Convulsions during Anesthesia; Experimental Analysis of Role of Hyperthemia and Respiratory Acidosis." *Anesthesiology* 1: 56-68, July 1940

Clement, F. W. "Convulsions during Anesthesia." *Anesth. & Analg.* Mar.-Apr., pg. 72, 1928

Cook, W. B. "Convulsions Associated with Nitrous Oxide-Ether Anesthesia." *Northwest. Med.* 39: 182-183, May 1940

Daly, Ashley. "Ether Convulsions: A Note as to Treatment." *Brit. J. Anaesth.* Jan. 1932, p. 67-68

Daly, Ashley. "Two Instances of Ether Convulsions." *Brit. J. Anaesth.* 14: 162-167, July, 1937.

Dawkins, C. J. M. "Convulsions Occurring under Vinethene (Vinyl Ether) Anesthesia." *Brit. M. J.* 1: 163-164, Feb. 3, 1940.

Dodd, H. G. "Ether Convulsions Controlled by Evipal (Barbital Derivative)." *Brit. J. Anaesth.* 14: 167-171, July 1937

Dodd, H. G. "Association of Atropine with Ether Convulsions." *Brit. J. Anaesth.* 16: 90-99, April 1939

Duggar, Charlotte. "Convulsions during General Anesthesia." *Bull. Amer. Ass'n Nurse Anesth.* May 1935, pg. 20

Durrans, S. F. "Convulsions under Anesthesia." *Brit. M. J.* 2: 228-229, Aug. 16, 1941

Gitlin, C. "Convulsions Occurring during Nitrous Oxide-Oxygen Anesthesia, with Report of Case." *J. Michigan M. Soc.* 37: 802-805, Sept. 1939

Griffith, H. R. "Two Unusual Complications (Pulmonary Edema and Convulsions) in Patients under Cyclopropane Anesthesia." *Anesth. & Analg.* 17: 298-299, Sept.-Oct. 1938

James, N. R. and Pask, E. A. "Ether Convulsions: Case." *Lancet* 2: 97-98, July 27, 1940

Jirka, F. J. and Hofrichter, F. C. "Convulsions under Anesthesia (Ethylene and Ether) with Report of Four Cases." *Illinois M. J.* 75: 549-551, June 1939

Kemp, W. N. "Tetany during Ether Anesthesia." *Anesth. & Analg.* Jan.-Feb. 1933, pages 1-4

Knight, Sallie. "Convulsions in Ether Anesthesia." *Bull. Nat'l Ass'n of Nurse Anesth.*, Aug. 1938, page 146

Logan, H. A. "Convulsions under Anesthesia." *Brit. M. J.* 1: 480-481, Mar. 29, 1941

Lundy, John S. and Tuohy, E. B. "General Anesthesia Complicated by Convulsions." *J. A. M. A.* 108: 971-972, Mar. 20, 1937

Lundy, John S. "Convulsions Associated with General Anesthesia." *Surgery* May 1937

McGregor, H. S. "Convulsive Tendency in Children." *M. Press* 197: 426-430, Nov. 9, 1938

Mennell, Z. "Ether Convulsions Occurring Twice in Same Patient." *Brit. J. Anaesth.* 14: 160-161, July 1937

Monroe, S. E. and Benjamin, E. L. "Convulsions Associated with General Anesthesia: Ether Convulsions; Report of Cases with Findings at Autopsy." *Am. J. Surg.* 53: 172-176, July 1941

Mousel, L. H. "Ether Convulsions." *Proc. Staff Meet. Mayo Clin.* 14: 285-287, May 3, 1939

Mousel, L. H. "An Unusual Case of Convulsions under Anesthesia." *Anesthesiology*, July 1940, page 103

Payne, R. Vaughn. "Ether Convulsions." *Med. J. Australia* 24 (i): 3, 100, Jan. 16, 1937 (abstract in *Anesth. & Analg.* Nov.-Dec. 1937, pg. 132S)

Pinkerton, H. H. "Ether Convulsions with Recovery." *Brit. M. J.* 1: 780-781, Apr. 9, 1938

Raab, Abraham. "Convulsions during Ether Anesthesia." *Anesth. & Analg.* Nov.-Dec. 1936, pgs. 295-297

Rovenstine, E. A. "Convulsions during Ether Anesthesia: A Case Report." *Anesth. & Analg.* Jan.-Feb. 1935, pages 40-42

Shackleton, R. P. W. "Ether Convulsions: Two Cases." *Brit. J. Anaesth.* 15: 25-27, Oct. 1937.

Slevin, J. G. "Convulsions during Ether Anesthesia: Two Case Reports and Discussion." *J. Michigan M. Soc.* 38: 482-486, June 1939

Smith, F. W. G. "Investigations in the Relationship of Heat Regulation to Late Ether Convulsions and Syndromes." *Anesth. & Analg.*, May-June 1938, pages 169-176

Steel, W. D. "Ether Convulsions: Case." *Brit. J. Anaesth.* 16: 64-66, Jan. 1939

Taylor, S. and Goldman, V. "Ether Convulsions, with Recovery." *Brit. M. J.* 2: 744-745, Oct. 8, 1938

Thierry, E. "Convulsions during Ether Anesthesia: Cases." *Anesth. & Analg.* 4: 85-113, Feb. 1938

Vickers, Hattie. "Case Report: Convulsions during Anesthesia." *Bull. Nat'l Ass'n of Nurse Anesth.* May 1935, pg. 19.

Walton, A. C. R. "Ether Convulsions." *Anesth. & Analg.* Jan.-Feb. 1929, pg. 8S

Wilson, Wilmer S. "Convulsions under Ether Anesthesia." *Anesth. & Analg.* Nov.-Dec. 1935, 281-282

Wyatt, O. S. "Convulsions in Children while under General Anesthesia: Report of Case." *Minnesota Med.* 23: 101-105, Feb. 1940

REFERENCES

"Changes in Response of the Respiratory Center During Anesthesia"

"Changes in Response of the Respiratory Center During Anesthesia"

Barach, A. L., Effects of Inhalation of Helium Mixed with Oxygen on the Mechanics of Respiration, J. Clin. Invest., 15:47, 1936

Barlow, O. W., and Fife, G. L. Avertin in Preanesthetic Medication: A Survey of 1,831 Surgical Anesthetics. Archives of Surgery, 29:810, 1934

Beecher, H. K., The Physiology of Anesthesia, 1st Ed., Oxford University Press, N. Y. 1938

Beecher, H. K., and Mayer, C. A. The Mechanism of Respiratory Failure under Barbiturate Anesthesia. J. Clin. Investig., 20:549, 1941

Bonnycastle, D. D. The Effect of Procaine on the Respiratory Mechanism. Cur. Res. in Anesth. & Analg., 18:164, 1939

Burstein, C. L., Respiratory Depression during Anesthesia Attributable to Carotid Sinus Disturbances: A Clinical and Laboratory Study. N. Y. State Med. J., 40:1767, 1940

Burstein, C. L., and Rovenstine, E. A. Respiratory Parasympathetic Action of Some of the Shorter Acting Barbiturates. J. Pharm. & Exp. Therap., 63:42, 1939

Calderone, F. A. Studies on the Ether Dosage after Preanesthetic Medication. J. Pharm. & Exp. Therap. 55:24, 1935

Clement, F. W. Control and Manipulation of Breathing in Relation to Anesthesia. Cur. Res. in Anesth. & Analg. 10:153, 1931

Duggar, Charlotte. Anesthesia in Brain Surgery. Bull. of Nurse Anesthetists, 7:75, 1939

Eversole, U. H. The Use of Helium in Anesthesia, J.A.M.A., 110:878, 1938

Eversole, U. H., Sise, L. F., and Woodbridge, P. D. The Clinical Use of Cyclopropane, Cur. Res. in Anesth. & Analg. 16:241, 1937

Eyster, J. A. E. Clinical and Experimental Observations on Cheyne-Stokes Respiration. J. Exp. Med., 8:565, 1906

Guedel, A. E. Inhalation Anesthesia. 1st Ed. The MacMillan Co., N. Y. 1937

Guedel, A. E., and Treweek, D. N. Ether Apneas. Cur. Res. in Anesth. & Analg. 13:263, 1934

Owathmey, J. T. Anesthesia, 2nd Ed. revised, The MacMillan Co., N. Y. 1929

Haterius, H. O. The Physiology of Respiration. Bull. of Nurse Anesthetists, 8:143, 1940

Hewitt, Anesthetics and Their Administration, 5th Ed., Henry Frowde and Hodder & Stoughton, London, 1922

Hill, E. F., and McDonald, A. D. Action of the Local Anesthetics on the Respiratory Apparatus. J. Pharm. & Exp. Therap. 53:454, 1935

Jackson, D. E. Variations in the Reaction of Different Parts of the Central Nervous System as Influenced by Depressant and Stimulating Drugs. J. Lab. & Clin. Med. 20:1, 1934

Lehrman, A. J. Respiratory Inhibitory and Paralytic Effects of Some Barbital Hypnotics and Coal Tar Analgesics. J. Pharm. & Exp. Therap. 65:235, 1939

Lewis, D. L., and Palser, E. G. M. Changes in Blood Pressure and Respiratory Volume Following a Spinal Anesthetic. Brit. Med. J. 1:1202, 1938

Lunday, J. S. A Method of Minimizing Respiratory Depression When Using Soluble Barbiturates. Proc. Staff

Meet. of the Mayo Clinic. 10:791, 1935

Mallinson, F. B. Management of Respiratory Depression during Anesthesia. Brit. Med. J. 1:123, 1940

Nicholson, H. C. Localization of the Central Respiratory Mechanism as Studied by Local Cooling of the Surface of the Brain Stem. Am. J. Physiology 115:402, 1936

Pimm, S. R. G. Inhalation Anesthesia with Recorded Respirations and Some Observations on Spinal Anesthesia. Cur. Res. in Anesth. & Anelg. 16:253, 1937

Robbins, B. H. Cyclopropane Anesthesia, 1st Ed. Williams & Wilkins Co. Baltimore, 1940

Sollmann, T.. A Manual of Pharmacology, 5th Ed. W. B. Saunders Co. Philadelphia, 1936

Stella, G. The Dependence of the Activity of the "Apneustic Center" on the Carbon Dioxide of the Arterial Blood. J. Physiology, 93:263, 1938

Weese, H. Concerning the Mechanism of Anesthesia Accidents in Sublingual Phlegmons Following Intravenous Use of Evipal. Cur. Res. in Anesth. & Analg. 18:15, 1939

Wiggers, C. J. Physiology in Health and Disease, 3rd Ed. Lea & Febiger, Philadelphia, 1939

Wilcox, Wm. The Uses and Dangers Of Drugs Other than Alkaloids. Brit. Med. J. 1:415, 1934

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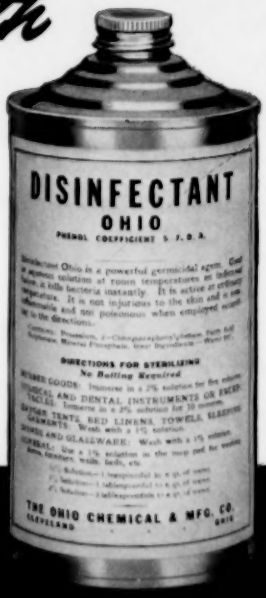

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